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THE DEVELOPMENT AND EVALUATION OF AN AFFECT ADJECTIVE CHECK LIST FOR THE MEASUREMENT OF ANXIETY IN CHILDREN.

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THE DEVELOPMENT AND EVALUATION OF AN AFFECT ADJECTIVE CHECK
LIST FOR THE MEASUREMENT OF ANXIETY IN CHILDREN

by

Jeffrey L. Price

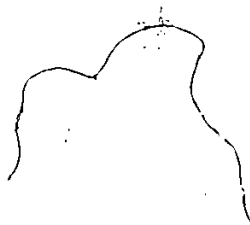
B. A. (Maj), McGill University, 1969

M. A., University of Windsor, 1971

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1976

② Jeffrey L. Price 1976



ABSTRACT

The present investigation was conducted to develop an adjective check list for the measurement of state and trait anxiety in children. This involved the development of items for the self-inventory as well as the initiation of the evaluative procedures to determine its reliability and validity. The first step in the study involved the development of test items by the rational method of test construction. The pool of items derived from the preliminary selection procedures was administered to a total of 174 Ss. Based upon the Ss' endorsements, the items were subjected to empirical item analysis, and the twenty items with the most optimal psychometric properties were selected for each of the state and trait tests. In order to evaluate the reliability of the newly-developed affect adjective check list, 38 Ss were given both the state and trait measures on two different occasions, in group supervised settings. The reliability correlations showed the predicted pattern: the internal consistency of each test was high whereas the test-retest reliability was high for the trait anxiety measure but only moderate for the state anxiety measure. Moreover, the difference between the test-retest correlations was significant, and was expected according to the theoretical distinction between state and trait variables. That is, state anxiety is assumed to be a transitory emotional state which varies from day to day while trait anxiety presupposes stability of the personality variable over time and over situations. In order to evaluate the validity of the newly-developed affect adjective check list,

42 Ss were randomly divided into two groups. For each group, the state and trait tests were administered on two different occasions, in a group setting. For one group, the two measures were administered firstly at the beginning of a day on which no examination was to be given and secondly at the commencement of a day on which an examination was to be written. For the second group, the order of the examination and non-examination days was reversed. In reference to the validity of the state and trait anxiety measures, the former test proved to be more sensitive to environmental conditions than the latter one. The manipulation of conditions to produce examination anxiety resulted in significantly increased scores on the state measure in comparison to the scores on the trait measure. Again, this was in the expected direction theoretically. Thus, the findings indicated that the adjective check list for the measurement of anxiety in children was indeed reliable and valid. This research provides additional evidence for the operational and theoretical distinction between state and trait anxiety. Specifically, there is evidence for the existence of the two dimensions of anxiety, and it is possible to assess the variables independently from one another, in a reliable and valid way. Other implications of this study were discussed, and future research proposals in the area were suggested.

PREFACE

I am initially grateful to Dr. William Balance, Chairman of my Dissertation Committee, whose enduring faith in my ability, helpful suggestions, and gentle direction were greatly appreciated. I wish to express my sincere appreciation to Dr. Frank Auld and Dr. Wolfgang Bringmann who clarified numerous points and made suggestions as to the content and form, which greatly improved the paper. For his efforts on behalf of my dissertation, my sincere gratitude must be extended particularly to Dr. David Illerbrun, my external reader, whose counsel proved most valuable. I am also indebted to Thomas J. Myszka, Ph.D., Harold J. Kaller, M.S.W., A.C.S.W., and Dennis W. Ferenc, M.A. for their readiness to give freely of their time and expertise in serving as judges for the study. Again, I am thankful for the much needed advice of two primary school educators, Gloria L. Price, B.A. and Gene Cousineau, B.A., who helped in the preparation of the test items used in the study. My appreciation is extended, too, to Mr. S. J. Charbonneau, Director of Education of the Kent County Roman Catholic Separate School Board, and Mr. D. Diubaldo, Area Superintendant of the Windsor Separate Schools, and to their principals and teachers who generously gave of their time to assist the investigator. Finally, to the grade five students, who must remain anonymous, "Thank-you", not only for serving as subjects for the study but also for making my task a more enjoyable one.

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TO THE CLINICAL PSYCHOLOGIST -
AWARE OF HIS LIMITATIONS AND THOSE OF HIS INSTRUMENTS
HE PERSEVERES IN HIS EFFORTS
TO DO THE BEST JOB OF ASSESSMENT
NOW POSSIBLE, WHILE ENGAGING
IN RESEARCH TO IMPROVE
ASSESSMENT TECHNIQUES FOR THE FUTURE.

E. J. Megargee
1966

)

CHAPTER I
INTRODUCTION AND BACKGROUND

Psychological Assessment

As early as 1890, the scientific importance and practical value of psychological measurements were realized (Anastasi, 1976). Indeed, since that time, much energy has been, and continues to be, expended in the assessment of behaviour, as reflected by the vast number of psychological measures available today. Such interest in psychological assessment is accounted for not only by its necessity in the applied area of psychology but also by its relevance in the development of psychology as a whole and as a science (McReynolds, 1968).

What is psychological assessment? McReynolds (1968), among others, has answered this question: psychological assessment is the "systematic use of a variety of special techniques in order to better understand a given individual, group, or psychological ecology (p. 2)." By the term "special techniques", he is referring to tests and measurements and similar procedures which have consensual acceptance in psychology, and by "understanding", he means knowledge about rather than sympathy or empathy with an individual or group. Briefly, a psychological test is essentially an objective and standardized measure of a sample of behaviour. Psychological tests are viewed as similar to tests in other sciences, insofar as observations are made on a small but carefully selected sample of an individual's or a group's behaviour (Anastasi, 1976).

Personality: Traits versus States

Personality is perhaps one of the central theoretical concepts and experimental variables in modern psychology, and the psychological tests and procedures available for measuring personality are numerous and heterogeneous. In general, the emphasis in personality assessment is on personality traits, that is, on the dimensions of personality which are assumed to have consistency and stability over time and over situations. Thus, procedures are typically employed to measure an individual's characteristic, overall personality functioning. It is possible, however, to make a distinction between how a person is currently functioning or feeling and how he characteristically behaves or feels (McReynolds, 1968). The distinction is between state and trait personality dimensions.

Although many of the human traits in which psychologists are interested actually do vary in level from day to day, observations have indicated that quantitative and qualitative differences between traits and states exist and have necessitated awareness of these differences (Johnson, 1968). In understanding this difference between the two concepts of trait and state, Cattell's (1976) explanation is helpful:

...As far as present knowledge goes...states shift by quite a different order of magnitude, and they probably swing more definitely in response to external stimuli, whereas traits may show change in more steady growth and decline. Further, if we average state measures across many occasions, people probably will not differ much in their average values, whereas in traits they would....(p. 15).

Cattell (1973) has also emphasized the importance of the

concepts of state and trait:

A taxonomy of behavioural patterns must encompass states as well as traits. Psychometrists, fully engrossed with trait definition problems, neglected states until comparatively recently... Yet in the prediction of behaviour, knowing whether a person is in a good or bad mood or angry or amorous may well be more useful than knowing his particular trait scores (p. 13).

This fact that such temporary occurrences as state and mood dimensions are as important as trait dimensions in understanding and predicting behaviour is generally recognized today (Zuckerman, 1960; Zuckerman and Lubin, 1965; Spielberger, 1966; Spielberger, Gorsuch and Lushene, 1970; Spielberger, Edwards, Lushene, Montuori and Platzek, 1973; Cattell, 1973).

Anxiety and Its Measurement

Much emphasis is being placed on understanding and measuring affects as traits and states. Anxiety, as a central construct in psychology because it is considered to be a variable of great relevance in many areas (including personality, learning, motivation, and psychopathology), is a focus of much attention. It is possible on theoretical grounds to make a distinction between how a person is currently feeling and how he feels characteristically (Zuckerman, 1960; Spielberger, 1966; McReynolds, 1968; Masterson, 1975). The distinction made is between anxiety state (current or temporary mood) and anxiety trait (consistent and stable affect which characterizes an individual). It has been reported also that two distinct anxiety factors, state and trait anxiety, have been isolated empirically by factor analytic techniques (Johnson, 1968; Kendell, Finch, Jr., Auerbach, Hooke and Mikulka, 1976). In addition,

experimental manipulations of immediate environmental conditions have provided support for the construct of state anxiety and for its distinction from the concept of trait anxiety (Zuckerman, 1960; Zuckerman and Lubin, 1965; Johnson, 1968; Spielberger et al., 1970; Spielberger et al., 1973).

Numerous techniques are available for the identification and assessment of anxiety. According to McReynolds (1968), any attempt to measure anxiety must have some systematic understanding of what is meant by the term, that is, of what it is which is being measured. Most usages of anxiety are derived from the experiential or psychological concept of anxiety as an (unpleasant) affect (McReynolds, 1968), although there exists no one definition which has achieved consensual agreement among workers in the area. What appears to be most appropriate for the present discussion is to incorporate the meanings from several sources into one more encompassing definition. Thus, anxiety state is defined here as a transitory condition of the individual which is characterized by subjective, consciously perceived feelings of apprehension, worry, and tension, whereas anxiety trait is defined as an acquired behavioural disposition based primarily on past residues and reflected in behaviour by relatively consistent and stable individual differences in existent anxiety and in anxiety proneness in response to stress (McReynolds, 1968; Spielberger, 1966).

The most logical and straight forward way of knowing how anxious an individual is is to ask him. Generally, personality inventories have been developed for the purpose of assessing anxiety as a trait while self-ratings and adjective check lists

have been constructed to measure state anxiety. However, the exclusive use of only one technique to measure a particular aspect of personality is slowly giving way. One reason for this appears to be the increasing popularity of the adjective check list as a technique for quantifying many variables (McReynolds, 1968; Masterson, 1975). The adjective check list as a self-report technique and several exemplars of the approach are described below.

The Adjective Check List Technique

The adjective check list approach to personality assessment is not a recent development as its use dates back more than four decades. Today, the number of personality check lists as self-report measures is impressive and continues to grow (Megargee and Menzies, 1968; Masterson, 1975).

The adjective check list as a self-report technique presents the individual with a list of descriptive terms which cover the behaviour or behaviours under investigation. Although the checking techniques and sorting procedures do vary somewhat from one check list to another, the basic approach requires that the individual check or rate the adjectives in the list which are descriptive of himself, and the person's score consists of the total number of checks or ratings (Megargee and Menzies 1968; Masterson, 1975).

According to Masterson (1975), the adjective check list technique provides objective and quantifiable measures of personality variables which are valid but at the same time presents few problems in terms of administration, scoring, and subject

resistance. She has noted that advocates of the technique emphasize that:

...the adjective checklist, as a psychometric instrument, has several advantages over the traditional personality inventory in that it is easy to administer and score, yet is sufficiently complex to cover a broad range of observed behaviour. It also presents the subject with a task which is meaningful and nonthreatening, resulting in a minimal amount of test-taking resistance, and is typically structured so as to be amenable to both rational and empirical analysis while being almost limitless in its range of application (1975; p. 276).

In addition, Masterson has explained other noteworthy features of the adjective check list approach, in particular, that its flexibility and adaptability to various experimental designs and repeatability make it an invaluable instrument in personality research. She has stated that "It is possible to use the technique as a basis of comparison between two concepts or between the same concept at two points in time (1975; p. 280)." For all these reasons, the check list is an important assessment technique.

Adjective check lists have been adapted for various purposes; check lists exist to quantify broad dimensions of the total personality, specific personality dimensions, and for affects and moods. An extensive review of the available check lists is presented by Masterson (1975). It is the adjective check lists measuring moods and affects which are of interest here, and the description and evaluation of several important ones will be elaborated upon below.

The most widely used adjective check list is the Multiple Affect Adjective Check List (MAACL), developed by Zuckerman and

Lubin (1965). The MAACL contains 132 adjectives (40 of which are "buffer" items) which have affective connotations for anxiety, depression, and hostility. There are two forms of the MAACL: the "general" and "today" forms. These differ only in the instructions to the subjects; in the "general" test, instructions require the individual to respond in terms of how he generally feels whereas in the "today" form, the instructions necessitate responding in accordance with how the individual feels today. Responding is by checking the adjectives which are descriptive in either test. The score on the "general" form represents the trait measure while the score on the "today" test refers to the state measure.

An extensive array of evaluations of the MAACL is available in the literature. Masterson (1975), for example, has provided a most thorough and recent review and critique which provides an account of the limitations of the adjective check list approach in general and of the MAACL in particular. Herron (1969), Megargee (1972), and Kelly (1972) have also presented informative critiques of the MAACL. In general, the MAACL has been found to have serious limitations in terms of its scoring procedure, reliability (internal consistency and test-retest), and its validity, and it has been found to be subject to the response bias of acquiescence. These shortcomings will be briefly expounded upon below and recommendations for remedies will be suggested.

Firstly, Herron (1969) and Masterson (1975) have questioned the scoring system of the MAACL. These authors have indicated that the scoring procedure, which consists of counting the number of positive items (positive exemplars of the affect) checked and the

number of negative items (negative exemplars) not checked, does not take into account that an individual may get a spuriously high score merely by handing in an almost blank answer sheet. Herron (1969) has reported that the correlation between the number of items checked and the affect scores is sometimes positive, sometimes negative, and sometimes near zero. Also, Masterson (1975) has emphasized that "the 'all or none' checking response...provides a minimum of quantifiable information in comparison to procedures in which a subject is, say, required to respond to each adjective, on a four or five-point scale, from highly applicable to totally inapplicable (p. 289)." Masterson has suggested that the rating scale be adapted to adjective check lists measuring affects in order to provide more information and to help control for the weakness of the scoring systems as the one used for the MAACL.

Theoretically, state anxiety is assumed to vary significantly from day to day whereas trait anxiety presupposes stability over time. Thus, one would expect that only the "general" form of the MAACL would have high test-retest reliability. Although Zuckerman and Lubin (1965), and others, have indeed demonstrated the relatively low test-retest reliability of the "today" form, for the "general" test, the reported reliability is only moderate (ranging from .54 to .70). A reasonably high coefficient would seem imperative for an instrument purporting to measure enduring and characteristic dimensions of personality (Masterson, 1975).

In spite of the fact that no item of the MAACL occurs on more than one scale, the intercorrelations among the three different scales, measuring three different affects, are very high,

in fact, as high as their reliabilities (Kelly, 1972; Masterson, 1975). Whether this results from the lack of discriminant validity of the instrument or whether this reflects true intercorrelations among the affects is not known (Megargee, 1972; Masterson, 1975). Nevertheless, Masterson (1975) has stated that:

Regardless of the interpretation chosen to account for such intercorrelations, the low discriminant validity...does pose problems of interpretation in evaluating experimental outcomes...checklists of this nature may consequently be less appealing for specific research purposes than factorially pure instruments (p. 295).

An inspection of the items of each scale of the MAACL does indicate that some of them may be measuring other affects, in addition to, or instead of, the affect reportedly measured by the items. Thus, discriminant validity may very well be a true problem with the MAACL. What is needed, then, are better definitions of the domain of each affect and better delineation of the boundary of one affect from the boundaries of the other affects. Moreover, Zuckerman and Lubin (1965) have failed to make use of factor analytic procedures which would have aided immensely in ensuring that the items of a particular scale measure only the affect under consideration (Lyman, 1963; Jackson, 1967).

Masterson (1975) has also suggested that response sets, such as acquiescence and social desirability, may be operating to influence check list responses. It follows, then, that the validity and utility of the MAACL as a personality measure may be interfered with on the basis that extraneous response tendencies may contaminate responses. In fact, the MAACL, in which the number of positive and negative exemplars of each variable have not been balanced, is

particularly susceptible to individual differences in response acquiescence. Therefore, this response tendency may account for a major portion of the variance of the total score. It would be preferable, therefore, to employ a test with a balance of positive and negative exemplars of the constructs under investigation. Although the authors of the MAACL have not reported their procedures for controlling the social desirability of the items of the affect scales, Masterson (1975) has stated that the evidence in the MAACL manual does indicate that substantial social desirability is not operating in influencing responses. (However, it has been emphasized by Jackson (1967) that it is beneficial that the control for social desirability in test development occur at the item level,)

In 1970, Spielberger, Gorsuch and Lushene developed a rating scale measure in order to assess state anxiety and trait anxiety in adults. The measure is called the State-Trait Anxiety Inventory (STAI). The STAI uses a more appropriate scoring system (the score for state and trait anxiety on two separate formats is equal to the sum of the positive exemplars and of the reversed negative exemplars) than the MAACL, and the manual reports much more favourable internal consistency and test-retest reliabilities than does the MAACL manual for the MAACL. However, some cautions are necessary in evaluating these data. It is questionable whether such high internal consistency is possible when the original items of the STAI had such low correlations as .25 with the existing anxiety scales from which they were derived (whether these items were finally discarded by later item analysis has not been

specified). Moreover, an inspection of the items of the anxiety scales indicates that there is a possibility of much overlap theoretically with other affects, such as depression, which are not measured by the STAI. In this connection, factor analytic procedures were carried out by Kendell et al. (1976) on the STAI. Although this work supports the distinction between trait and state anxiety on a theoretical level, as previously mentioned, it also provides evidence that not all the items measure anxiety and that there is much overlap of the items on the different factors. Kendell and his associates found that four factors can be derived from the items on the STAI, however, they interpreted only three of them as the fourth factor had a loading of only one item. Four of the items loaded above +.50 (the cutoff point) on more than one of the three factors and, of the 40 items of the STAI, 12 did not load on any factor and 24 loaded on one factor.

It must be noted, also, that the test for state anxiety of the STAI is basically an adjective check list (although not a pure one, as one item is not an adjective but a personality inventory statement) whereas the test for trait anxiety of the STAI is a mixture of both the adjective check list and personality inventory approaches. Moreover, the state anxiety measure and the trait anxiety measure employ different categories in their rating scales, although the number of ratings possible (four) remains the same on both formats. Therefore, it is questionable as to whether it is valid to compare two different types of measurements, measuring two different variables, which use different conditions in responding. In the light of recent studies (for example, Herron

(1969)), which indicate that the reliability and validity of tests may fluctuate considerably depending on their instructions, this is a very relevant issue. It would be preferable, then, and more impressive, to hold as many conditions as possible constant in developing measures whose reliability and validity depend very much on their relationship to each other, as is the case in tests for state and trait anxiety assessment.

One more aspect is important in the examination of the STAI. In the development of the STAI, it appears the social desirability of the items was not taken into account in the item selection. Therefore, one does not know how much of the variance in subjects' responding is "true" variance and how much is due to the social desirability of the items.

More recently, Spielberger et al. (1973) have adapted the STAI to measure the same variables in children. The measure is called the State-Trait Anxiety Inventory for Children (STAIC). The STAIC suffers from many of the same limitations of the STAI, as described above, and the STAIC may have one additional problem. Although the STAIC has been adapted in format and wording to be applicable for use with children, its items have been selected from the measures used to assess anxiety in adults; however, it would be important to consider whether there may be differences between the descriptions of anxiety in children as compared to the descriptions of anxiety in adults. If so, this may entail the use of different adjectives. Moreover, one must reconsider the social desirability of the items because the social desirability may differ for children. A measure developed to assess anxiety in

children should consider these issues.

To summarize briefly, in spite of the limitations of existing affect adjective check lists, the adjective check list technique has a unique place in psychological assessment and such measures serve a definite function in assessment and research. The technique provides measures which are easy to administer and score, cover a broad spectrum of behaviour, are amenable to rational and empirical analysis, present minimal subject resistance, and generate much information about psychological variables. What is needed, however, is more attention to the development of adjective check list measures in terms of the theory of the variables under investigation and in respect to recent advances in psychometric theory and procedures.

CHAPTER II

STATEMENT OF THE PROBLEM

Specific Aims

It seems evident from the information presented previously that much work remains to be accomplished on adjective check lists as valid and reliable measures of affects, such as anxiety. In particular, much data must be generated in the case of children if the adjective check list technique is to prove as promising with children as it has with adults.

The first aim of this study, then, was to develop an affect adjective check list for the measurement of state anxiety (the "now" form) and for trait anxiety (the "general" form) in children. The development of the adjective check list for the measurement of anxiety in children was based upon recent theoretical and psychometric thinking and advancements. Thus, in order to produce a reliable and valid measure and to correct the limitations of existing affect adjective check lists, the following procedures in test development were instituted: (a) careful theoretical formulation of the construct of anxiety as well as delineation of its boundaries; (b) use of both positive and negative exemplars and a rating scale format for both tests to provide more information to the test user; (c) control of response biases, such as social desirability and acquiescence, at the item level; (d) use of a consistent and consensual scoring procedure; and (e) utilization of

extensive item analysis procedures.

A second aim of the study was to initiate the procedures to evaluate the affect adjective check list developed here, in terms of its reliability (internal consistency and test-retest) and its validity (face, content, and, most importantly, construct). In considering the difference between a test with a "general" time set and a "now" time set, it was expected that a different reliability pattern would be obtained for each test. Specifically, it was hypothesized that:

- (1) Both tests would demonstrate high internal consistency on a single test occasion, and
- (2) The "general" test (trait anxiety) would yield high stability over time, that is, high test-retest reliability, but that the "now" test (state anxiety) would not show as high stability.

As described earlier, state anxiety is conceptualized as a transitory emotional condition whereas trait anxiety refers to a relatively stable personality characteristic. In considering the difference between a test with a "general" time set and a "now" time set, in terms of construct validity, it was expected that the "now" measure would and should be more sensitive to immediate environmental conditions. Specifically, it was hypothesized that:

- (3) Manipulation of environmental conditions to produce anxiety would result in significantly increased anxiety scores on the "now" form (state anxiety) in comparison to the scores on the "general" form (trait anxiety).

Significance of the Problem Area

(1) It is significant that the study has developed a measure of an assessment technique whose use is becoming more widespread. It is believed that the project provides a valuable instrument for use in both psychological assessment and research.

(2) It is important that the study has endeavoured to apply recent theoretical and methodological approaches to psychological assessment. The development of adequate assessment technology is germane to the study of behaviour.

(3) Importantly, too, the investigation has provided an objective, self-report measure for affective anxiety, specifically developed for use with children. This area is one in which little work has been done previously.

(4) Again, it is relevant that the present study has looked at a recent and relevant issue in psychology, namely, the distinction between affective states and affective traits. In particular, the focus was on one of the central constructs in psychology, that is, anxiety. The study attempted to delineate the difference and similarities between state and trait anxiety. In this way, our understanding of the concept of anxiety may be furthered.

CHAPTER III

THE DEVELOPMENT OF THE AFFECT ADJECTIVE CHECK LIST

In this section, a description of the rationale and of the basic steps which were followed in the development of the adjective check list for the measurement of anxiety in children is presented. The purpose is to describe the construction of the scale in reference to the substantive definition of the variable, the problems of response styles and test validity, and the development of the scale with optimum psychometric properties, as elaborated upon by Jackson (1967) and Neil (1968), among others.

A. ITEM DESIGN AND PRELIMINARY ITEM SELECTION

The first step in developing the adjective check list was the careful formulation of a theoretically-oriented definition of the dimension of anxiety. State anxiety was defined here as a transitory or temporary condition of the individual delineated by subjective, consciously perceived feelings of apprehension, worry, and tension whereas the state or mood of calmness was defined as a transitory or temporary condition of the individual delineated by subjective, consciously perceived feelings of calmness and by the absence of feelings of apprehension, worry, and tension. Trait anxiety was defined here as an acquired behavioral disposition based primarily on past experience residues and reflected in behaviour by relatively consistent and stable individual differences in existent anxiety and

in anxiety proneness in response to stress while calmness as a trait was defined as an acquired disposition based primarily on past experience residues and reflected in behaviour by relatively consistent and stable individual differences in existent calmness and in calmness proneness in response to stress and by the absence of anxiety.

It has been emphasized that, if a scale for measuring a personality variable is to acquire a high level of validity, test development must involve validation procedures for substantive, structural, and external components of validity (Loevinger, 1957; Jackson, 1967). Thus, the process of developing test items for the affect adjective check list involved careful formulation of theoretically-oriented adjectives of the dimension of anxiety, the delineation of the boundaries between closely related dimensions as well as the determination of which adjectives are not included within the anxiety dimension. According to Jackson (1967), this process enhances both the convergent and discriminant validity of a test.

To fulfill the above aim, test items were written with reference to personality theory, and were selected from various sources, including the available adjective check lists (Zuckerman, 1960; Zuckerman and Lubin, 1965; Gough and Heilbrun, 1965; Spielberger et al., 1970; Spielberger et al., 1973). All adjectives were written such that none would be beyond the average fifth grade child's active language ability. Fifth grade subjects were used in developing and in evaluating the affect adjective check list as several studies pertaining to emotion and affects of children have selected students from grades 4, 5, and/or 6, and, in order to facilitate comparisons

at a future date, the median grade, the fifth grade, was chosen for this investigation. The extensive word list of Thorndike and Lorge (1972) was employed as an aid in the process of developing appropriate items.

Approximately one half of the adjectives of the item pool represented one end of the dimension of anxiety and one half of the adjectives were opposite exemplars of the construct. In addition to providing more accurate definition of either end of the continuum, the balancing of the number of positively-keyed and negatively-keyed items in a pool reduces the distortion due to certain types of response bias (Jackson, 1967). For example, Neil (1968) emphasized that Cronbach (1958) observed that when items are presented in a rating scale format, in which subjects indicate how self-descriptive each item is by rating it on a scale, some people tend to give more extreme ratings than do others. According to numerous authors, then, where the number of positive and negative exemplars have not been balanced, this response tendency has accounted for a major proportion of the variance of total scale scores (Neil, 1968).

One hundred and eighteen items were prepared for the item pool so as to represent all areas of the content stated or implied in the definition of the construct. In order to ensure that the items would represent the universe of content which the scale was to measure, each item was evaluated by three judges who are professionals with several years experience in dealing with children and adolescents. Each judge was asked to rate the items according to the degree to which they represent state and trait anxiety and state and trait calmness, in separate sessions. A nine-point rating scale ranging from extremely

descriptive, through neutral, to extremely undescriptive was used. The instructions given to the judges are presented in Appendix 1. Only those items which were rated as representative of the dimensions were retained for the item pool (the cut-off point was a rating of 6.0). The hundred and eighteen items and the mean scale ratings of the judges are presented in Appendices 2 and 3 for the positive exemplars and for the negative exemplars, respectively. In addition, two primary grade teachers were asked to judge the degree of difficulty of each word, and those words which were assessed as being beyond the ability of the average fifth grade pupil were revised or deleted from the final list.

One aim of the study was to attempt to develop two measures, the trait, or "general", test and the state, or "now", test, differing only in their instructions. One test would instruct respondents to rate each adjective in terms of how descriptive it is of them generally whereas the other measure would ask the subject to rate each adjective in terms of how descriptive it is of him now. However, this was not possible because of the differential ratings of the judges. That is, the average ratings of the judges indicated that sometimes the same adjective was regarded as being more applicable to the state concept of anxiety than to the trait concept and that sometimes one adjective was considered to be more descriptive of trait anxiety than of state anxiety. Thus, the preliminary tests were comprised of both same and unlike items as well as different instructions to the subjects. Empirical analysis of the test items for both the state and trait anxiety measures later revealed that some items, although identical on the two measures, proved to be

better discriminants for one theoretical concept than for the other one. The observation that some adjectives were more descriptive of one type of personality variable, state or trait anxiety, or that some adjectives were better discriminants of one type of personality variable, state or trait anxiety, is in agreement with the findings of other workers in the area, such as Spielberger et al. (1970) and Spielberger et al. (1973), that some items were better indicators of state anxiety while other items were better exemplars of trait anxiety.

The presentation of the complete pool of items for each measure (as derived from the preliminary selection procedures, as described above) was thought to be a very difficult and/or fatiguing task for a fifth grade pupil. The pool of items consisted of 77 items for state anxiety and 83 items for trait anxiety. For this reason, the preliminary items for both the state and trait measures were divided into two, yielding two tests for state anxiety (SA1 and SA2) and two tests for trait anxiety (TA1 and TA2), which are reproduced in Appendices 4 and 5, respectively. Subjects in the preliminary study were asked to respond to SA1 and TA1 or to SA2 and TA2. Ratings of each test consisted of a four-point scale, ranging from a rating of "1", indicating that the adjective describes oneself "not at all", to a rating of "4", indicating that the adjective describes oneself "very much". Ratings of "2" and "3" were indicative of adjectives which describe one's feelings "a little bit" and "quite a bit", respectively.

The objective of the preliminary sample, described above, was to reduce the number of items in each test, through item analysis,

in order to develop both a state measure of anxiety and a trait measure of anxiety, by collapsing the best items of SA1 and SA2 into one and by combining the best items of TA1 and TA2 into one. This would provide measures which would be more appropriate for the use with children. However, this procedure of combining the tests from the first preliminary study would essentially yield two new measures with new psychometric properties (Anastasi, 1976). Thus, the two new measures, derived from SA1 and SA2 and TA1 and TA2, were subjected to an item analysis in the second preliminary study in which the subjects employed a similar rating scale. The preliminary studies which are discussed briefly above are expanded upon below.

B. EMPIRICAL ANALYSIS AND FINAL ITEM SELECTION

METHOD

Preliminary Sample I

Subjects

One hundred and forty subjects (Ss), 72 males and 68 females, participated in this preliminary study. All Ss were fifth grade pupils enrolled in the elementary school systems in the Windsor and Chatham, Ontario, areas. Any additional information about the Ss, such as their age or socioeconomic status, was not available because of the school boards' regulations concerning the anonymity of the students and their families.

Procedure

The Ss were divided randomly into two groups such that one group was given one set of the "general" tests and "now" tests whereas the other group received the second set of the "general" and "now" tests. Thus, one half of the Ss received SA1 and TA1 while SA2 and TA2 were administered to the other half. For both groups, the tests were given on two different sessions, a week apart, in group supervised settings. A counter-balanced design was employed for each group: half of the Ss were given the "general" test first while the other half was given the "now" form on the first testing session. On the second occasion, the Ss received the two tests in an order reversed from the first session. The verbal instructions given to the Ss are presented in Appendix 6.

Before the next step in the development of the affect adjective check list, that is, item analysis, could be performed, scores for each S were computed. The first such score to be computed was the S's total endorsement score for the preliminary "general" test. The score used here was the sum of the S's keyed responses, and the procedure for determining the total score, which is described below, is one of many available procedures and is adapted from Neil (1968) and Spielberger et al. (1970). First, the S's endorsement ratings of the positively-keyed items (the S's ratings of positive exemplars of the construct) were summed to obtain a part score for that item pool. In order to obtain the score for the S in terms of the construct of anxiety, the S's ratings of each of the negatively-keyed items was subtracted from 5, thereby reversing the direction of the rating. The reversed ratings of the negatively-keyed items were

summed with the part score computed for the positively-keyed items, which yielded the S's total score for trait anxiety. The same procedure was followed with the "now" test to derive an endorsement score for state anxiety for each S.

Item Analysis

Items on each of the tests for state and trait anxiety were eliminated which showed extreme endorsement proportions (less than .03 or more than .95) as "such items carry little information, tend to have unstable correlations, are usually extreme in desirability, and generally possess only modest reliability and validity (Jackson, 1967, p. 15)."

A second analysis was carried out to check for sex-linked choices for each item for the "general" and "now" tests. The point-biserial correlation was employed (Ferguson, 1959). Only items which did not correlate significantly with the variable of sex were utilized for further item analysis.

The item-remainder correlation (biserial correlation coefficient, Lyman, 1963) was computed between each item of each test and the total of all the remaining items of that provisional scale. Only those items which showed a correlation coefficient of at least .30 with their scale were retained for further analysis. According to Jackson (1967), the requirement that items correlate highly with their scale (and that this relationship is not substantially a function of extreme endorsement proportion) tends to produce a final scale with relatively high reliability and discriminant measurement properties. Later, in the second preliminary study, a check was also made to indicate that

the high correlations between the items and their respective total scale were not a function of the social desirability of the items. The results of the first preliminary item analysis are presented in Appendix 7. The new state measure of anxiety and the new trait measure of anxiety which were derived from the item analysis and combination procedures are reproduced in Appendices 8 and 9, respectively.

Preliminary Sample II

Subjects

The Ss, 19 males and 15 females, were fifth grade students enrolled in the elementary school systems in the Windsor and Chatham areas.

Procedure

The Ss were given both the "general" test and the "now" test of the affect adjective check list, each of which comprised the items that best met the criteria of the preliminary item analysis. The testing occurred on two different sessions, in group supervised settings. A counter-balanced design was employed: half of the Ss were given the "general" form first whereas the other half was given the "now" form on the first testing session. On the second occasion, which was one week later, the Ss received the two tests in an order reversed from the first session. The verbal instructions given to the Ss were the same as the instructions given to the Ss of the first preliminary study, and have been reproduced in Appendix 6.

During a third group-testing session, one day after the second testing, all Ss were asked to judge the social desirability of the items. This time, the Ss judged the adjectives in terms of how pleasing each one would be of themselves. Again, ratings were made on a four-point rating scale, and a rating of "1" was indicative of an adjective which was "not at all pleasing" and a rating of "4" indicated that the adjective was "very much pleasing". Ratings of "2" and "3" were indicative of adjectives which were "a little bit pleasing" and "quite a bit pleasing", respectively. Instructions were given to the Ss both verbally and in written form; these instructions are presented in Appendix 10.

Separate data-gathering sessions were employed for the endorsements and social desirability judgments in order to minimize the probability of carry-over from one task to another. The endorsements of the items of the "general" and "now" tests were presented before the judgments of the social desirability of the items because of evidence for considerable influence from social desirability judgments to endorsements but little or no evidence for the reverse (personal communication from Jackson and Messick, 1967, to Neil, 1968).

Again, before item analysis could be completed, it was necessary to compute the total scores on each test for the Ss. The same procedure for determining the final scores as was previously described for the first preliminary study was used here.

Item Analysis

In regard to the endorsement proportion, the correlation with the variable of sex, and the correlation of the items with their respective total scale scores, the procedures and criteria for item analysis remained the same for the second preliminary study as for the first preliminary study. These were described previously. In addition to these procedures, the Pearson-Product Moment Correlation (Ferguson, 1959) was computed for each of the items of each test to determine the direction, magnitude, and significance of the correspondence between item endorsement ratings and item ratings of social desirability. In order that a final scale has high reliability and discriminant measurement properties, items should not correlate highly with their scale as a function of desirability (Jackson, 1967). Those items of the "general" and "now" tests which had a highly significant correlation between their endorsement and social desirability ratings were excluded from the final scale formats. At the .01 level of significance, for the "general" test, the cut-off point was .369, whereas the cut-off point for the "now" test was .449. This was a valid procedure as none of the items which met the criteria showed an extreme rating of social desirability without also correlating significantly with the social desirability rating (Edwards, 1960).

The results of the second preliminary item analysis are presented in Appendix 11. The 20 items that best met the criteria, and, therefore, comprise the final "general" test and the final "now" test, are presented in Table 1 and Table 2, respectively. Twenty items were selected for each test of the affect adjective

check list in order to facilitate the possibility of future comparisons with the scales devised by Spielberger et al. (1973).

TABLE 1

THE TRAIT ANXIETY TEST OF THE ADJECTIVE CHECK LIST
FOR THE MEASUREMENT OF ANXIETY IN CHILDREN

Name: _____ Boy _____ Girl _____

DIRECTIONS

WHAT IDEAS DESCRIBE HOW YOU FEEL? Everyone has his or her own ideas. There are no right or wrong answers. This is not a test.

A number of ideas which boys and girls have used to describe themselves are given here. Read each sentence. Decide how much it describes how you generally feel. Then put a check mark in the column which shows how much the idea describes you.

If you think that the idea describes how you generally feel "not at all", then put a check mark in the first column to the right of the sentence. If you think that the idea describes you "very much", then put a check mark in the fourth column to the right of the sentence.

If you think that the idea describes how you generally feel somewhere in between "not at all" and "very much", then put a check mark in column two called "a little bit" or in column three called "quite a bit".

Rate each idea. Do not spend too much time on any one sentence but give the answer which seems to describe best how you generally feel.

	NOT AT ALL	A LITTLE BIT	QUITE A BIT	VERY MUCH
1. I am blushed.....
2. I feel jumpy.....
3. I feel pressured.....
4. I feel confused.....

TABLE 1 CONTINUED

5. I feel afraid.....				
6. I am relaxed.....				
7. I am fearful.....				
8. I feel nervous.....				
9. I feel panicky.....				
10. I am calm.....				
11. I feel shaky.....				
12. I am terrified.....				
13. I am worried.....				
14. I feel hurried.....				
15. I am not sure.....				
16. I feel frantic.....				
17. I feel distracted.....				
18. I feel uncertain.....				
19. I feel stressed.....				
20. I feel uneasy.....				

TABLE 2

THE STATE ANXIETY TEST OF THE ADJECTIVE CHECK LIST
FOR THE MEASUREMENT OF ANXIETY IN CHILDREN

Name: _____ Boy _____ Girl _____

DIRECTIONS

WHAT IDEAS DESCRIBE HOW YOU FEEL? Everyone has his or her own ideas. There are no right or wrong answers. This is not a test.

A number of ideas which boys and girls have used to describe themselves are given here. Read each sentence. Decide how much it describes how you feel right now, at this moment. Then put a check mark in the column which shows how much the idea describes you.

If you think that the idea describes your present feelings "not at all", then put a check mark in the first column to the right of the sentence. If you think that the idea describes you "very much", then put a check mark in the fourth column to the right of the sentence.

If you think that the idea describes your present feelings somewhere in between "not at all" and "very much", then put a check mark in column two called "a little bit" or in column three called "quite a bit".

Rate each idea. Do not spend too much time on any one sentence but give the answer which seems to describe your present feelings best.

	NOT AT ALL	A LITTLE BIT	QUITE A BIT	VERY MUCH
1. I feel excited.....				
2. I am calm.....				
3. I feel afraid.....				
4. I feel steady.....				

TABLE 2 CONTINUED

5. I feel confused.....				
6. I am fearful.....				
7. I feel panicky.....				
8. I am frightened.....				
9. I am upset.....				
10. I am worried.....				
11. I am broody.....				
12. I am not sure.....				
13. I feel distracted.....				
14. I feel trembly.....				
15. I am doubtful.....				
16. I feel uneasy.....				
17. I feel embarrassed.....				
18. I am relaxed.....				
19. I feel nervous.....				
20. I feel shaky.....				

CHAPTER IV

THE EVALUATION OF THE AFFECT ADJECTIVE CHECK LIST

The focus of the present chapter is the empirical evaluation of the adjective check list for the measurement of anxiety in children, whose development and initial evaluation have been described previously. The evaluative procedures involved estimates of the reliability, both the internal consistency and test-retest reliabilities, and of the construct validity of the affect adjective check list. The methods employed in the study were based upon the procedures followed by Zuckerman (1960), Zuckerman and Lubin (1967), and Spielberger et al. (1970) in their evaluations of the AACL, MAACL, and STAI, respectively.

A. RELIABILITY STUDY

In considering the difference between a test with a "general" time set and a "now" time set, it was hypothesized that a different reliability pattern would be obtained for each test. Hypothesis I predicted that both tests would demonstrate high internal consistency on a single test occasion whereas Hypothesis II stated that the "general" test would yield high stability over time (test-retest reliability) but that the "now" test would not show as high stability.

METHOD

Subjects

Thirty-eight Ss, 18 male and 20 female fifth grade students in elementary school in the Windsor area, participated in the study.

Procedure

The 38 Ss were given both the "general" test and the "now" test of the affect adjective check list on two different occasions, in group supervised settings. A counter-balanced design was employed: half of the Ss were given the trait ("general") form first, while the other half were given the state ("now") form on the first testing session. On the second occasion, which was one week later, the Ss received the two tests in an order reversed from the first session. The Ss were given a standard set of instructions (see Appendix 12). If there were any questions asked by the Ss, the instructions were repeated verbatim from the instruction sheet.

The "general" and "now" tests were scored manually for each S, and the scores consisted of the sum of ratings, following the method previously described.

RESULTS

To provide answers to the questions posed at the beginning of this investigation, the internal consistency, or homogeneity, was calculated using the Kuder-Richardson Formula (K-R 20), alpha coefficient, (Ferguson, 1959; Magnusson, 1967), and the test-retest reliability was computed by the Pearson Product-Moment Correlation

Coefficient (Ferguson, 1959).

Hypothesis I stated that both the state and trait tests would demonstrate high internal consistency on a single test occasion. The alpha coefficients for both tests are listed in Table 3. The alpha coefficients for the state and trait tests were .79 and .82, respectively. Thus, the internal consistency of each test is high, and Hypothesis I is confirmed.

Recalling Hypothesis II, it was predicted that the trait ("general") test would yield high stability over time, that is, high test-retest reliability, but that the state ("now") test would not show as high stability. The test-retest reliabilities are presented in Table 4. Table 4 indicates that the test-retest correlation for the trait test was very high (.94) while the correlation for the state test was relatively lower (.68). The Fisher z transformation was employed to test the significance of the difference between the two correlation coefficients obtained (Edwards, 1960). The two correlation coefficients were found to be significant beyond the .01 level. Although the correlation for the state test is moderate in absolute terms, the fact that it is significantly lower than the correlation for the trait test supports the second hypothesis of this study. In other words, the test measuring state anxiety does demonstrate less stability over time than does the test measuring trait anxiety. The raw data of the Ss' scores for the anxiety measures are listed in Appendix 13.

B. VALIDITY STUDY

As described earlier, state anxiety is conceptualized as a transitory emotional condition whereas trait anxiety refers to a

TABLE 3

INTERNAL CONSISTENCY FOR THE AFFECT ADJECTIVE CHECK LIST

State Anxiety Test	0.79
Trait Anxiety Test	0.82

TABLE 4
TEST-RETEST RELIABILITY FOR THE
AFFECT ADJECTIVE CHECK LIST

State Anxiety Test	0.68
Trait Anxiety Test	0.94

relatively stable personality characteristic. In considering the difference between a test with a "general" time set and a "now" time set, in terms of construct validity, it was expected that the "now" (state) measure would be more sensitive to immediate environmental situations, such as examination conditions, than would the "general" (trait) test. Specifically, it was hypothesized in this study that pre-examination anxiety would result in significantly increased anxiety scores on the "now" form of the affect adjective check list in comparison with the "general" one.

METHOD

Subjects

Forty-two Ss, 21 male and 21 female fifth grade students enrolled in elementary school in the Chatham area, participated in the study.

Procedure

In order to have a counter-balanced design for conditions, the Ss were divided randomly into two groups. The first group consisted of 8 males and 11 females while the second group had 10 male and 13 female Ss. For each group, the "general" and "now" forms of the affect adjective check list were administered on two different sessions, in a group setting. For one group, the two forms were administered firstly at the beginning of a day on which no examination was to be given and secondly at the commencement of a day on which an examination was to be written. For the second group, the order of the

examination and non-examination days was reversed such that the Ss in this group were administered the two forms firstly at the beginning of a day on which an examination was to be written and secondly at the commencement of a day on which no examination was to be given.

A counter-balanced design was also used for the test forms. In each group, half of the Ss were randomly given the "general" form first, while the other half were given the "now" version on the first testing occasion. In contrast, on the second testing session for each group, the Ss received the two tests in an order reversed from the first day. The Ss were given a standard set of instructions, which is reproduced in Appendix 12. If there were any questions asked by the Ss, the instructions were repeated verbatim from the instruction sheet.

The "general" and "now" forms were scored manually for each S, according to the method employed previously.

RESULTS

Hypothesis III predicted that pre-examination anxiety, that is, testing on an examination day, would result in increased anxiety scores on the "now" (state) version of the affect adjective check, list in comparison to the scores on the "general" (trait) form. No significant difference between the two tests was expected on the non-examination day.

In order to test Hypothesis III, the analysis of variance was utilized to assess the significance between the means for the main variables and of the interaction effects (Winer, 1962). An

AxBxC analysis with repeated measures over the last two factors was undertaken. The factors were; Subjects (A), either male or female, Test (B), either the "now" (state) test or the "general" (trait) test, and Day (C), whether the tests were administered on a non-examination day or on an examination day.

Table 5 presents a summary of the data for the analysis of variance. Examination of Table 5 reveals that the difference between the levels of factor C (non-examination day versus examination day) is significant at the .01 level and that the BxC (TestxDay) interaction effect is also significant at the .01 level. The significant interaction effect for the TestxDay factors is diagrammatically represented in Figure 1. From this presentation, it is apparent that the pre-examination anxiety (testing on an examination day) resulted in significantly increased anxiety scores on the "now" (state) form of the affect adjective check list in comparison to the "general" (trait) test; no significant difference between the two tests occurred on the non-examination day. Therefore, Hypothesis III was supported.

The raw data of the scores for all the Ss on the anxiety measures for both non-examination and examination days are listed in Appendix 14.

TABLE 5
ANALYSIS OF VARIANCE FOR SEX, TEST, AND DAY VARIABLES
OF THE SUBJECTS' SCORES

Source of Variation	SS	df	MS	F
<u>Between Subjects</u>	<u>7573.98</u>	<u>41</u>		
A (Sex)	176.09	1	176.09	0.95
Subj. w. groups	7397.89	40	184.95	
<u>Within Subjects</u>	<u>3322.50</u>	<u>126</u>		
B (Test)	14.88	1	14.88	0.60
AB	40.03	1	40.03	1.61
B x subj. w. groups	994.59	40	24.86	
C (Day)	228.67	1	228.67	25.38**
AC	9.52	1	9.52	1.06
C x subj. w. groups	360.31	40	9.01	
BC	408.59	1	408.59	12.91**
ABC	0.22	1	0.22	0.01
BC x subj. w. groups	1265.69	40	31.64	
TOTAL	10896.48	167		

** $p < 0.01$

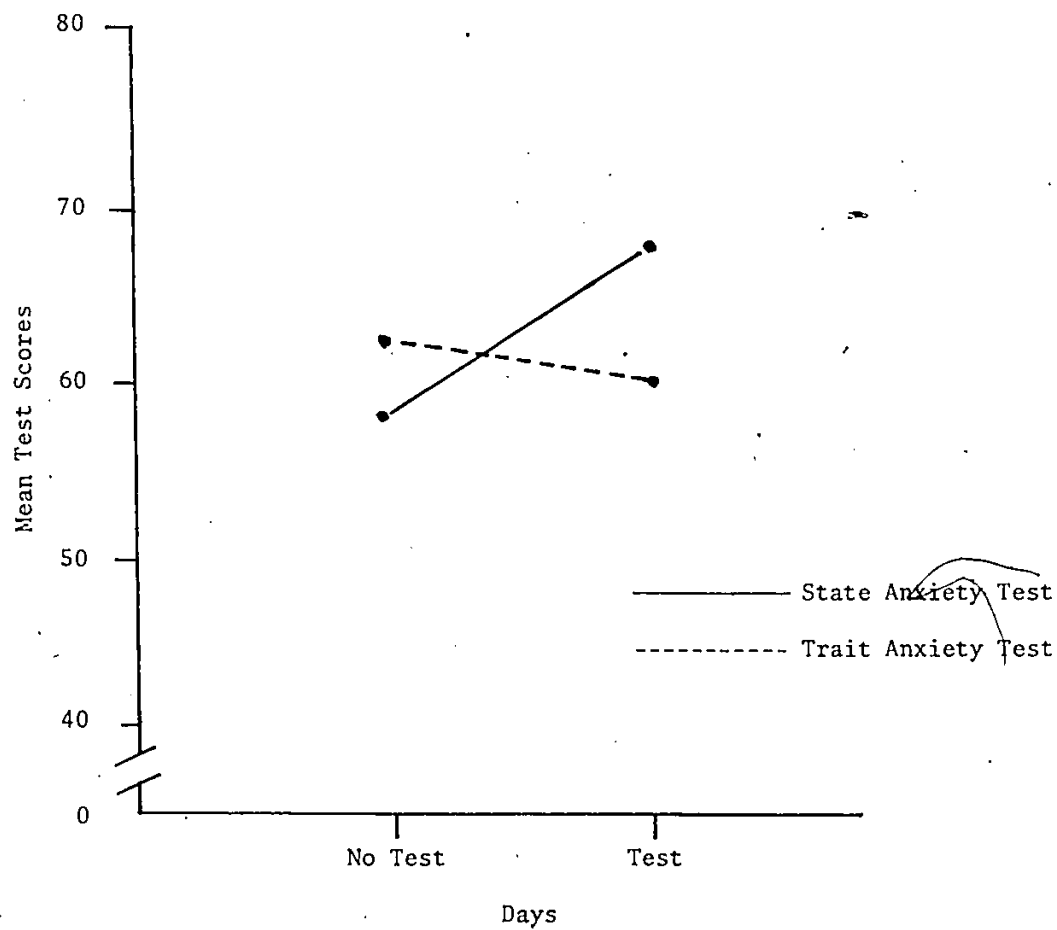


FIGURE 1. A DIAGRAMMATIC REPRESENTATION OF THE SIGNIFICANT TEST AND DAY INTERACTION EFFECT FOR SUBJECTS' SCORES

CHAPTER V

DISCUSSION

The present investigation was conducted to develop an adjective check list for the measurement of state and trait anxiety in children. This involved the development of items for the self-inventory as well as the initiation of the evaluative procedures to determine its reliability and validity. The findings indicated that the measures of state and trait anxiety were indeed reliable and valid. The reliability correlations showed the predicted pattern: the internal consistency of each test was high whereas the test-retest reliability was very high for the trait anxiety measure but only moderate for the state anxiety measure. Moreover, the difference between the test-retest correlations was significant and was expected according to the theoretical distinction between the state and trait variables. That is, state anxiety is assumed to be a transitory emotional state which varies from day to day while trait anxiety presupposes stability of the personality variable over time and over situations. In reference to the validity of the state and trait anxiety measures, the former test proved to be more sensitive to environmental conditions than the latter one. The manipulation of conditions to produce examination anxiety resulted in significantly increased scores on the state measure in comparison to the scores on the trait measure. Again, this was in the expected direction theoretically.

These findings are consistent with the results of previous examinations by Zuckerman and Lubin (1965), Spielberger et al. (1970), and Spielberger et al. (1973). Taken together, all these researches provide striking evidence for the operational and theoretical distinction between state and trait anxiety. Specifically, there is evidence for the existence of the two dimensions of anxiety, and it is possible to assess the variables independently from one another, in a reliable and valid way.

Whereas the trend of the results reviewed in the preceding paragraphs is consistent with the work in the area, discrepancies between the previous studies and the present one do exist. One major difference is in terms of the reported test-retest reliability coefficient correlations. Spielberger et al. (1973), for example, obtained correlations for their trait anxiety measure which varied from .65 to .71 and correlations for the state measure that varied from .31 to .47. The correlations were higher in the current study; the correlation coefficients for the state and trait measures developed were .68 and .94, respectively. However, the difference between the correlations of the present study was significant. For both the state and trait measures of this investigation, the higher correlations appear to reflect the greater reliability in comparison to the self-inventory developed by Spielberger and his associates in 1973. Similarly, the adjective check list of this study appears to be more reliable than the instruments developed by Zuckerman and Lubin (1965) and Spielberger et al. (1970) for the assessment of state and trait anxiety in adults.

At this time, it may be recalled that one aim of the present

examination was to improve upon the existing adjective check lists in terms of such psychometric properties which would lead to greater reliability (and, therefore, validity, also). The results indicated that this goal was accomplished.

A major difficulty encountered in the construction of the present adjective check list of anxiety was the development of an adequate number of negative exemplars of the dimension of anxiety. Most of those developed were not able to meet the empirical criteria for item selection and were, therefore, not included in the final inventory. The measure for trait anxiety includes only two negative exemplars while the state measure consists of three negative items. Unfortunately, this reduces the amount of information that can be obtained from the inventory and may reduce the optimal psychometric properties of the check list, too. The failure to provide an equal number of positive and negative exemplars of anxiety may have been due, in part, to the high standards to which the items were subjected. The criteria for item selection was maintained at a high level in order to ensure a more reliable, and, hence, a more valid, adjective check list. The item analysis of the present study was more rigorous than the procedures employed by other workers in the field, for example, by Spielberger et al. (1973). For instance, Spielberger and his associates (1973) did not take into account the possible relationship between the item endorsements and the social desirability of the items, although a significant correlation between the two decreases the validity of a test. In the present investigation, however, an attempt was made to exclude those items which correlated highly with the response bias of social desirability. An inspection

of the negative statements of anxiety indicated that many were excluded because of their significant correlations with social desirability. Moreover, an examination of the inventory developed by Spielberger and his associates (1973) demonstrated that several of their negative exemplars were not employed in the item pool of the present study as they were believed to extend beyond the dimension of anxiety and represent, or at least overlap, other affect dimensions. Finally, it should be noted that the other workers in the area may have encountered a similar difficulty in constructing adequate negative exemplars of anxiety; Spielberger et al. (1973), for example, did not include one for the measure of trait anxiety whereas the state anxiety measure has 10 positive exemplars and 10 negative exemplars. However, Spielberger and his co-workers do not make mention of this state of affairs in their description of the preliminary manual of inventory development.

One may speculate that it may be more difficult to induce such feelings of calmness in children or that it has not been possible at this time to precisely define the terms which a child equates to the state and/or trait of calmness. The problem of developing adequate negative exemplars of anxiety may also mean that children are more aware of and/or sensitive to feelings of anxiety in comparison to the absence of such feelings and the presence of the opposite affect. Whatever the explanation that is postulated now, this is one area which will need closer inspection in the future.

The most important implication of the findings of the present investigation is for the practical problems faced in assessing anxiety in children. Anxiety affects motivation, personality, learning,

and behaviour, and it may lead to psychopathology. As such, it is an important aspect for those dealing with children, the children themselves, their parents, and those who come in contact with the child in his everyday life. Until recently, the self-inventory has been non-existent as a method for assessing anxiety in children. What is needed is a quick, reliable and valid way of measuring children's anxiety. The results of this study are important in developing an adjective check list, in establishing its reliability, and in demonstrating its sensitivity to anxiety. Moreover, it is crucial to be able to determine whether a child is typically anxious or whether some current situation or event at home or at school accounts for his anxiety. The present self-inventory, then, promises to be useful in the examination of such variables which affect anxiety. The more precise distinction between state and trait anxiety will also provide some direction to the type of intervention that would be most helpful for a particular child. Thus, the present research will be useful in aiding educators and clinicians with the evaluation of feelings which interfere with effective and appropriate functioning and with the instigation of remedial procedures.

Again, the adjective check list developed here can serve as a screening device to identify children who are likely to need counselling or therapeutic assistance. Spielberger et al. (1970), for example, have concluded that it is those students who are disposed to experience anxiety who develop problems. They based their conclusion upon the finding that high anxiety trait scores for university students were associated with reports of a larger number of problems in all areas of adjustment. Thus, attention to the scores of the trait

anxiety measure, administered as a routine screening procedure, may facilitate remedial procedures and may provide a preventive measure against the development of more serious problems at a later date.

Other uses of the measures developed here are manifold. The state measure can be easily employed in studies which require repeated assessment of affect over time, such as in stress experiments that necessitate pre- and post-test measures of affect and in the assessment of therapeutic intervention. The state anxiety test is ideally suited as a measure for natural stress which includes surgery, examination, and death in the family. The trait measure, on the other hand, can be utilized whenever an estimate of the general level of anxiety is warranted.

Zuckerman and Lubin (1965) have also suggested the possibility that the adjective check list may aid in bridging the theoretical chasm between affect as a clinical phenomenon and affect as a normal stress occurrence. According to these authors, qualitative and/or quantitative differences between clinical and normal phenomena may be elucidated by the analysis of responses on the state-trait inventory.

The development of the adjective check list for measuring anxiety in children and the reliability and validity studies presented here can be only the beginning of a very long and complex process of test construction. Future endeavours in this area should be directed toward the examination of how children of different grades respond on the self-inventory in order to extend the applicability of the measures to children of all ages. It is only when information

from a large sample is gathered that normative data can be available to give full meaning to the individual scores derived from the inventory, moreover. This would be another task for the future.

It would also be interesting to investigate how neurotic children and children with difficulty in adequate reality testing would respond to the state and trait measures of anxiety. This would have both theoretical and practical contributions.

It would be of great relevance to provide evidence for concurrent validity of the adjective check list developed in this study by investigating the correspondence between the measures and others, such as the STAIC (Spielberger et al., 1973) and the Children's Manifest Anxiety Scale (Castaneda, McCandless and Palermo, 1956) and the General Anxiety Scale for Children (Sarason, Davidson, Lighthall, Waite and Ruebush, 1960).

Finally, it may be fruitful to explore the relationship of the newly-developed adjective check list with such organismic factors as age, education, socioeconomic status, aptitudes, and sex.

APPENDIX 1
INSTRUCTIONS GIVEN TO JUDGES

Enclosed you will find slips of paper with descriptive words. Your task will be to judge how descriptive each word is of how a child is currently functioning or feeling in terms of anxiety. That is, how descriptive is each word to describe a state or mood of anxiety. State anxiety is defined here as a transitory or temporary condition of the individual delineated by subjective, consciously perceived feelings of apprehension, worry, and tension.

In making your judgments, you are to use a nine-point rating scale to describe the degree to which each word is descriptive or undescriptive of the state of anxiety as defined here, as shown below:

- 9 Extremely descriptive
- 8 Very descriptive
- 7 Moderately descriptive
- 6 Slightly descriptive
- 5 Neutral
- 4 Slightly undescriptive
- 3 Moderately undescriptive
- 2 Very undescriptive
- 1 Extremely undescriptive

For example, one person described three words as follows:

- | | |
|-----------------|---------------|
| 1. UNSTABLE | 7 |
| 2. EFFECTIVE | $\frac{3}{3}$ |
| 3. UNDISTRACTED | $\frac{6}{6}$ |

The person who made these judgments decided that word 1 is moderately descriptive of a child's current, transitory anxiety (state anxiety), that word 2 is moderately undescriptive of state anxiety, and that word 3 is slightly descriptive of state anxiety. If you made the judgments, you might have written different numbers as your answer.

In the same manner as above, indicate your judgments of how descriptive or undescriptive each of the words on the slips of paper is of anxiety as a state or mood. Would you kindly place the number for

each word on the top righthand corner of the slip of paper on which the word is printed. Then, please attach the paper clip in order that the slips of paper will be kept together. Please place the slips of paper in the envelope and seal it.

Thank-you.

Enclosed you will find slips of paper with descriptive words. Your task will be to judge how descriptive each word is of how a child is currently functioning or feeling in terms of calmness. That is, how descriptive is each word to describe a state or mood of calmness which is defined here as a transitory or temporary condition of the individual delineated by subjective, consciously perceived feelings of calmness and by the absence of feelings of apprehension, worry, and tension.

In making your judgments, you are to use a nine-point rating scale to describe the degree to which each word is descriptive or undescriptive of the state of calmness as defined here, as shown below:

- 9 Extremely descriptive
- 8 Very descriptive
- 7 Moderately descriptive
- 6 Slightly descriptive
- 5 Neutral
- 4 Slightly undescriptive
- 3 Moderately undescriptive
- 2 Very undescriptive
- 1 Extremely undescriptive

For example, one person described three words as follows:

- | | |
|-----------------|----------|
| 1. UNSTABLE | 3 |
| 2. EFFECTIVE | <u>7</u> |
| 3. UNDISTRACTED | <u>6</u> |

The person who made these judgments decided that word 1 is moderately undescriptive of a child's current, transitory calmness (state calmness), that word 2 is moderately descriptive of state calmness, and that word 3 is slightly descriptive of state calmness. If you made the judgments, you might have written different numbers as your answer.

In the same manner as above, indicate your judgments of how descriptive or undescriptive each of the words on the slips of paper

is ~~of~~ calmness as a state or mood. Would you kindly place the number for each word on the top righthand corner of the slip of paper on which the word is printed. Then, please attach the paper clip in order that the slips of paper will be kept together. Please place the slips of paper in the envelope and seal it.

Thank-you.

Enclosed you will find slips of paper with descriptive words. Your task will be to judge how descriptive each word is of how a child characteristically functions or feels in terms of anxiety. That is, how descriptive is each word to describe anxiety as a trait. Trait anxiety is defined here as an acquired behavioural disposition based primarily on past experience residues and reflected in behaviour by relatively consistent and stable individual differences in existent anxiety and in anxiety proneness in response to stress.

In making your judgments, you are to use a nine-point rating scale to describe the degree to which each word is descriptive or undescriptive of anxiety as a personality trait as defined here, as shown below:

- 9 Extremely descriptive
- 8 Very descriptive
- 7 Moderately descriptive
- 6 Slightly descriptive
- 5 Neutral
- 4 Slightly undescriptive
- 3 Moderately undescriptive
- 2 Very undescriptive
- 1 Extremely undescriptive

For example, one person described three words as follows:

- | | |
|-----------------|---|
| 1. UNSTABLE | 7 |
| 2. EFFECTIVE | 3 |
| 3. UNDISTRACTED | 6 |

The person who made these judgments decided that word 1 is moderately descriptive of a child's trait of anxiety, that word 2 is moderately undescriptive of trait anxiety, and that word 3 is slightly descriptive of trait anxiety. If you made the judgments, you might have written different numbers as your answer.

In the same manner as above, indicate your judgments of how descriptive or undescriptive each of the words on the slips of paper is

of anxiety as a trait. Would you kindly place the number for each word on the top righthand corner of the slip of paper on which the word is printed. Then, please attach the paper clip in order that the slips of paper will be kept together. Please place the slips of paper in the envelope and seal it.

Thank-you.

Enclosed you will find slips of paper with descriptive words. Your task will be to judge how descriptive each word is of how a child characteristically functions or feels in terms of calmness. That is, how descriptive is each word to describe calmness as a trait. Calmness is defined here as an acquired disposition based primarily on past experience residues and reflected in behaviour by relatively consistent and stable individual differences in existent calmness and in calmness proneness in response to stress, and by the absence of anxiety.

In making your judgments, you are to use a nine-point rating scale to describe the degree to which each word is descriptive or undescriptive of the trait of calmness as defined here, as shown below:

- 9 Extremely descriptive
- 8 Very descriptive
- 7 Moderately descriptive
- 6 Slightly descriptive
- 5 Neutral
- 4 Slightly undescriptive
- 3 Moderately undescriptive
- 2 Very undescriptive
- 1 Extremely undescriptive

For example, one person described three words as follows:

- | | |
|-----------------|---------------|
| 1. UNSTABLE | $\frac{3}{7}$ |
| 2. EFFECTIVE | $\frac{7}{7}$ |
| 3. UNDISTRACTED | $\frac{6}{6}$ |

The person who made these judgments decided that word 1 is moderately undescriptive of a child's trait of calmness, that word 2 is moderately descriptive of trait calmness, and that word 3 is slightly descriptive of trait calmness. If you made the judgments, you might have written different numbers as your answer.

In the same manner as above, indicate your judgments of how descriptive or undescriptive each of the words on the slips of paper is

of calmness as a trait. Would you kindly place the number for each word on the top righthand corner of the slip of paper on which the word is printed. Then, please attach the paper clip in order that the slips of paper will be kept together. Please place the slips of paper in the envelope and seal it.

Thank-you.

APPENDIX 2

THE POSITIVE EXEMPLARS OF THE ITEM POOL FOR STATE AND TRAIT
ANXIETY AND THE MEAN RATINGS FOR DESCRIPTIVENESS OF THE JUDGES

TABLE A

THE POSITIVE EXEMPLARS OF THE ITEM POOL FOR STATE ANXIETY AND
THE MEAN RATINGS FOR DESCRIPTIVENESS OF THE JUDGES

EXEMPLARS	MEAN RATING	EXEMPLARS	MEAN RATING
Anxious	8.0	Scared	6.3
Jittery	7.0	Jumpy	6.7
Excitable	6.0	Pressured	6.0
Mixed-up	4.3	Trembly	6.7
Embarrassed	6.0	Worked-up	6.3
Blushed	4.0	Cautious	6.0
Sweaty	7.3	Complaining	6.0
Excited	6.7	Confused	6.7
Useless	3.7	Cowardly	4.3
Timid	6.0	Disorderly	2.7
Afraid	7.7	Worrying	4.7
Desperate	4.3	Suffering	4.0
Fearful	8.0	Worried	6.0
Frightened	6.7	Irritated	6.0
Nervous	7.3	Uneasy	7.3
Panicky	8.0	Sorry	3.0
Shaky	7.7	Sensitive	6.0
Tense	8.0	Restless	6.7
Terrified	7.3	Strained	3.3
Upset	7.3	Troubled	6.0
Dreamy	3.7	Suspicious	4.3
Fault-finding	4.7	Whiny	6.3
Hurried	6.0	Unsure	6.7
Inhibited	6.0	Concerned	5.0
Preoccupied	6.0	Emotional	6.3
Reflective	3.3	Fretful	6.7
Ineffective	3.7	Moody	6.7
Unclear	3.3	Touchy	7.0
Unstable	3.3	Insecure	6.3
Distracted	7.0	Withdrawn	6.3
Guilty	4.3	Fidgety	6.7
Surprised	4.3	Uncertain	6.0
Startled	4.3	On edge	6.7
Doubtful	6.0	Hesitating	5.7
Uncontrolled	4.3	Bothered	6.3
Lacking confidence	6.0	Uneasy	6.7
Stressed	6.3	Muddled	4.3

TABLE B

THE POSITIVE EXEMPLARS OF THE ITEM POOL FOR TRAIT ANXIETY AND
THE MEAN RATINGS FOR DESCRIPTIVENESS OF THE JUDGES

EXEMPLARS	MEAN RATING	EXEMPLARS	MEAN RATING
Anxious	7.7	Scared	7.7
Jittery	7.3	Jumpy	6.0
Excitable	8.0	Pressured	6.0
Mixed-up	6.0	Trembly	7.3
Embarrassed	4.3	Worked-up	6.7
Blushed	6.0	Cautious	4.3
Sweaty	7.3	Complaining	3.7
Excited	6.7	Confused	6.0
Useless	2.0	Cowardly	5.0
Timid	6.3	Disorderly	2.0
Afraid	6.3	Worrying	6.3
Desperate	4.0	Suffering	3.0
Fearful	7.0	Worried	6.7
Frightened	6.0	Irritated	5.0
Nervous	7.0	Uneasy	6.7
Panicky	7.0	Sorry	2.7
Shaky	6.0	Sensitive	6.3
Tense	7.3	Restless	6.7
Terrified	7.3	Strained	3.3
Upset	6.7	Troubled	6.0
Dreamy	3.3	Suspicious	5.7
Fault-finding	4.3	Whiny	4.7
Hurried	7.0	Unsure	7.0
Inhibited	6.0	Concerned	3.0
Preoccupied	4.3	Emotional	7.0
Reflective	3.3	Fretful	7.3
Ineffective	4.0	Moody	8.0
Unclear	3.3	Touchy	7.0
Unstable	5.0	Insecure	6.0
Distracted	6.3	Withdrawn	6.0
Guilty	6.0	Fidgety	6.7
Surprised	4.0	Uncertain	6.3
Startled	5.3	On edge	6.7
Doubtful	7.3	Hesitating	6.3
Uncontrolled	6.3	Bothered	7.0
Lacking confidence	8.0	Uneasy	6.0
Stressed	6.0	Muddled	6.7

APPENDIX 3

THE NEGATIVE EXEMPLARS OF THE ITEM POOL FOR STATE AND TRAIT
ANXIETY AND THE MEAN RATINGS FOR DESCRIPTIVENESS OF THE JUDGES

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TABLE C

THE NEGATIVE EXEMPLARS OF THE ITEM POOL FOR STATE ANXIETY AND
THE MEAN RATINGS FOR DESCRIPTIVENESS OF THE JUDGES

EXEMPLARS	MEAN RATING	EXEMPLARS	MEAN RATING
Peaceful	8.3	Relaxed	8.3
Safe	5.0	Rested	7.3
Free	5.0	Comfortable	7.7
Fine	4.3	Relieved	5.7
Calm	9.0	Alert	4.0
Content	8.3	Capable	6.7
Pleasant	6.0	Clear-thinking	6.3
At ease	7.0	Confident	6.0
Secure	5.3	Cool	7.3
Steady	5.7	Reliable	4.0
Determined	4.0	Stable	6.3
Easy going	6.7	Adaptable	5.0
Effective	4.0	Poised	6.0
Energetic	3.3	Carefree	6.0
Forceful	3.0	Leisurely	3.7
Certain	6.0	Unemotional	5.3
Unafraid	7.7	Strong	4.7
Fearless	5.3	Unexcited	7.3
Satisfied	6.7	Unexcitable	7.7
Sure of myself	7.7	Unembarrassed	5.0
Uninhibited	2.0	Undistracted	5.7
Untroubled	7.3	Unpressured	6.7

TABLE D

THE NEGATIVE EXEMPLARS OF THE ITEM POOL FOR TRAIT ANXIETY AND
THE MEAN RATINGS FOR DESCRIPTIVENESS OF THE JUDGES

EXEMPLARS	MEAN RATING	EXEMPLARS	MEAN RATING
Peaceful	8.7	Relaxed	8.7
Safe	6.0	Rested	6.7
Free	5.3	Comfortable	7.0
Fine	4.7	Relieved	6.3
Calm	9.0	Alert	5.3
Content	8.0	Capable	7.3
Pleasant	3.7	Clear-thinking	7.3
At ease	7.3	Confident	5.3
Secure	5.7	Cool	7.0
Steady	6.7	Reliable	4.7
Determined	4.7	Stable	7.0
Easy going	7.7	Adaptable	6.0
Effective	3.3	Poised	7.0
Energetic	2.7	Carefree	6.7
Forceful	3.7	Leisurely	3.3
Certain	7.3	Unemotional	4.0
Unafraid	7.0	Strong	3.7
Fearless	6.3	Unexcited	7.3
Satisfied	8.3	Unexcitable	6.3
Sure of myself	7.7	Unembarrassed	6.7
Uninhibited	3.0	Undistracted	5.3
Untroubled	8.3	Unpressured	7.0

APPENDIX 4
THE TESTS FOR STATE ANXIETY
FOR THE FIRST PRELIMINARY SAMPLE

TABLE E
THE FIRST TEST FOR STATE ANXIETY (SA1)
FOR THE FIRST PRELIMINARY SAMPLE

Name: _____ Boy _____ Girl _____

DIRECTIONS

WHAT IDEAS DESCRIBE HOW YOU FEEL? Everyone has his or her own ideas. There are no right or wrong answers. This is not a test. A number of ideas which boys and girls have used to describe themselves are given here. Read each sentence. Decide how much it describes how you feel right now, at this moment. Then put a check mark in the column which shows how much the idea describes you.

If you think that the idea describes your present feelings "not at all", then put a check mark in the first column to the right of the sentence. If you think that the idea describes you "very much", then put a check mark in the fourth column to the right of the sentence.

If you think that the idea describes your present feelings somewhere in between "not at all" and "very much", then put a check mark in column two called "a little bit" or in column three called "quite a bit".

Rate each idea. Do not spend too much time on any one sentence but give the answer which seems to describe your present feelings best.

	NOT AT ALL	A LITTLE BIT	QUITE A BIT	VERY MUCH
1. I feel peaceful.....				
2. I feel anxious.....				
3. I feel free.....				
4. I am jittery.....				
5. I am frantic.....				
6. I feel embarrassed.....				
7. I feel sweaty.....				
8. I feel excited.....				
9. I feel scared.....				
10. I am moody.....				
11. I am content.....				
12. I feel pleasant.....				
13. I feel jumpy.....				
14. I feel trembly.....				
15. I am "worked-up".....				
16. I am at ease.....				

TABLE E CONTINUED

17. I feel secure.....				
18. I am cautious.....				
19. I am complaining.....				
20. I feel steady.....				
21. I am relaxed.....				
22. I feel rested.....				
23. I feel confused.....				
24. I feel afraid.....				
25. I feel comfortable.....				
26. I feel relieved.....				
27. I am fearful.....				
28. I am capable.....				
29. I am frightened.....				
30. I feel nervous.....				
31. I feel panicky.....				
32. I feel shaky.....				
33. I feel tense.....				
34. I am terrified.....				
35. I am upset.....				
36. I am worried.....				
37. I am irritated.....				
38. I am clear-thinking.....				
39. I am uneasy.....				
40. I am sensitive.....				

TABLE F
THE SECOND TEST FOR STATE ANXIETY (SA2)
FOR THE FIRST PRELIMINARY SAMPLE

Name: _____ Boy _____ Girl _____

DIRECTIONS

WHAT IDEAS DESCRIBE HOW YOU FEEL? Everyone has his or her own ideas. There are no right or wrong answers. This is not a test. A number of ideas which boys and girls have used to describe themselves are given here. Read each sentence. Decide how much it describes how you feel right now, at this moment. Then put a check mark in the column which shows how much the idea describes you.

If you think that the idea describes your present feelings "not at all", then put a check mark in the first column to the right of the sentence. If you think that the idea describes you "very much", then put a check mark in the fourth column to the right of the sentence.

If you think that the idea describes your present feelings somewhere in between "not at all" and "very much", then put a check mark in column two called "a little bit" or in column three called "quite a bit".

Rate each idea. Do not spend too much time on any one sentence but give the answer which seems to describe your present feelings best.

	NOT AT ALL	A LITTLE BIT	QUITE A BIT	VERY MUCH
1. I feel restless.....				
2. I am troubled.....				
3. I feel confident.....				
4. I feel cool.....				
5. I feel hurried.....				
6. I feel confined.....				
7. I am broody.....				
8. I am easily offended....				
9. I am "easy-going".....				
10. I am calm.....				
11. I am whiny.....				
12. I am not sure.....				
13. I am emotional.....				
14. I am not secure.....				
15. I am not frantic.....				

TABLE F CONTINUED

16.	I feel stable.....				
17.	I feel distracted.....				
18.	I feel poised.....				
19.	I feel trembly.....				
20.	I feel uncertain.....				
21.	I am on edge.....				
22.	I feel "fancy-free".....				
23.	I feel certain.....				
24.	I am fearless.....				
25.	I feel timid.....				
26.	I am lacking confidence.....				
27.	I feel satisfied.....				
28.	I feel stressed.....				
29.	I am withdrawn.....				
30.	I am doubtful.....				
31.	I am bothered.....				
32.	I feel uneasy.....				
33.	I am sure of myself.....				
34.	I am not distracted.....				
35.	I am not troubled.....				
36.	I am not pressured.....				
37.	I am bold.....				

APPENDIX 5
THE TESTS FOR TRAIT ANXIETY
FOR THE FIRST PRELIMINARY SAMPLE

TABLE G

THE FIRST TEST FOR TRAIT ANXIETY (TA1)
FOR THE FIRST PRELIMINARY SAMPLE

Name: _____ Boy _____ Girl _____

DIRECTIONS

WHAT IDEAS DESCRIBE HOW YOU FEEL? Everyone has his or her own ideas. There are no right or wrong answers. This is not a test.

A number of ideas which boys and girls have used to describe themselves are given here. Read each sentence. Decide how much it describes how you generally feel. Then put a check mark in the column which shows how much the idea describes you.

If you think that the idea describes how you generally feel "not at all", then put a check mark in the first column to the right of the sentence. If you think that the idea describes you "very much", then put a check mark in the fourth column to the right of the sentence.

If you think that the idea describes how you generally feel somewhere in between "not at all" and "very much", then put a check mark in column two called "a little bit" or in column three called "quite a bit".

Rate each idea. Do not spend too much time on any one sentence but give the answer which seems to describe best how you generally feel.

	NOT AT ALL	A LITTLE BIT	QUITE A BIT	VERY MUCH
1. I feel peaceful.....
2. I feel free.....
3. I feel anxious.....
4. I am jittery.....
5. I am excitable.....
6. I feel mixed-up.....
7. I am blushed.....
8. I feel sweaty.....
9. I am calm.....
10. I feel excited.....
11. I feel timid.....
12. I am content.....
13. I feel pleasant.....
14. I am at ease.....

TABLE G CONTINUED

15.	I feel secure.....				
16.	I feel scared.....				
17.	I feel steady.....				
18.	I feel jumpy.....				
19.	I feel pressured.....				
20.	I feel trembly.....				
21.	I am worked-up.....				
22.	I feel confused.....				
23.	I feel afraid.....				
24.	I am fearful.....				
25.	I am relaxed.....				
26.	I feel rested.....				
27.	I feel comfortable.....				
28.	I am frightened.....				
29.	I feel nervous.....				
30.	I feel panicky.....				
31.	I feel shaky.....				
32.	I feel relieved.....				
33.	I feel tense.....				
34.	I am terrified.....				
35.	I am upset.....				
36.	I am capable.....				
37.	I am worrying.....				
38.	I am clear-thinking.....				
39.	I feel confident.....				
40.	I am worried.....				
41.	I am uneasy.....				
42.	I am sensitive.....				
43.	I feel cool.....				

TABLE H
THE SECOND TEST FOR TRAIT ANXIETY (TA2)
FOR THE FIRST PRELIMINARY SAMPLE

Name: _____ Boy _____ Girl _____

DIRECTIONS

WHAT IDEAS DESCRIBE HOW YOU FEEL? Everyone has his or her own ideas. There are no right or wrong answers. This is not a test. A number of ideas which boys and girls have used to describe themselves are given here. Read each sentence. Decide how much it describes how you generally feel. Then put a check mark in the column which shows how much the idea describes you.

If you think that the idea describes how you generally feel "not at all", then put a check mark in the first column to the right of the sentence. If you think that the idea describes you "very much", then put a check mark in the fourth column to the right of the sentence.

If you think that the idea describes how you generally feel somewhere in between "not at all" and "very much", then put a check mark in column two called "a little bit" or in column three called "quite a bit".

Rate each idea. Do not spend too much time on any one sentence but give the answer which seems to describe best how you generally feel.

	NOT AT ALL	A LITTLE BIT	QUITE A BIT	VERY MUCH
1. I am determined.....
2. I am easy-going.....
3. I feel restless.....
4. I am troubled.....
5. I feel hurried.....
6. I feel confined.....
7. I feel calm.....
8. I am moody.....
9. I feel composed.....
10. I feel stable.....
11. I am prepared.....
12. I feel poised.....
13. I am easily offended.....
14. I am not sure.....

TABLE H CONTINUED

15.	I am emotional.....				
16.	I feel frantic.....				
17.	I am not secure.....				
18.	I feel "fancy-free".....				
19.	I feel distracted.....				
20.	I feel trembly.....				
21.	I feel certain.....				
22.	I feel uncertain.....				
23.	I feel tight.....				
24.	I am fearless.....				
25.	I feel timid.....				
26.	I feel in control.....				
27.	I am lacking confidence.....				
28.	I feel stressed.....				
29.	I am withdrawn.....				
30.	I feel guilty.....				
31.	I feel satisfied.....				
32.	I am sure of myself.....				
33.	I am doubtful.....				
34.	I am hesitating.....				
35.	I am bothered.....				
36.	I am not embarrassed.....				
37.	I feel uneasy.....				
38.	I am not troubled.....				
39.	I am not pressured.....				
40.	I am bold.....				

APPENDIX 6

INSTRUCTIONS GIVEN TO SUBJECTS OF THE PRELIMINARY SAMPLES

Good morning (good afternoon). I'm Mr. Price from the University of Windsor, and I am interested in the area of emotions of boys and girls. What I would like to do is to discuss with you the question: "What are the feelings of children?". Are there any of you who do not want to do this? Good. Thank-you for your help.

I have a paper that has some ideas about feelings written on it. Very shortly, I would like you to rate these ideas according to how much they describe you. But first, I shall explain, on the blackboard, the way in which to answer the ideas on the paper. (At this point, the experimenter wrote three sentences on the board, and to the right of these statements, he drew the columns of ratings. The sentences were: "I have red hair", "I am a man", and "I am tall".)

As you can see, we have three ideas on the left, and to the right, are four columns with words at the top of them. (The experimenter pointed to the appropriate areas on the blackboard.) Let us look at the first sentence, "I have red hair". Now, if I think that the idea "I have red hair" describes me "not at all", then I would put a check mark here, in the column called "not at all" and beside the idea, like this. Let us look at the second idea, "I am a man". If I think that the idea "I am a man" describes me "very much", which column would I use? (The experimenter asked one student.) Good. So, I would put a check mark here.

Now that you know where to show ideas that describe you "not at all" or "very much", let us look at an idea that may be somewhere in between. Many of the ideas about feelings may describe you neither "not at all" nor "very much" but somewhere in between. Let us look at the third idea, "I am tall". If I think that this idea describes me

"a little bit", where would I put my check mark? (The experimenter asked one student.) Good. So, I would put a check mark here. Are there any questions?

There are many ideas on the paper that you will have. Make sure that you read each one and rate each one. Please do not turn over your paper until I tell you to do so. (The experimenter distributed the papers.)

Please turn your paper over. Place your name at the top lefthand corner of the paper. I am asking you to put your name on the paper because the next time that we meet here, I want to make certain that you get a different set of ideas to rate and not the same paper which you are seeing today. Also, please put a check mark beside "boy" or "girl", whichever you are. I am asking you to do this because I want to see if boys and girls feel the same about the ideas. I am the only one who will see your answers. Another thing; you may have some sentences which are different than the sentences that other children have, and some of you may have more sentences than others have. So, you may finish at different times. Please sit quietly, and let the other children finish. Are there any questions? Okay, read the directions carefully, and then, please begin.

APPENDIX 7

THE RESULTS OF THE FIRST PRELIMINARY ITEM ANALYSIS

TABLE I
THE FIRST PRELIMINARY ITEM ANALYSIS FOR THE
FIRST TEST OF STATE ANXIETY (SAI)

Item	Item-remainder Correlation	Correlation with Criterion of Sex	Percent in Each Alternative				
			0	1	2	3	4
1	0.12	0.04	0	3	22	50	25
2*	0.31	-0.13	2	37	33	17	12
3	0.04	-0.08	0	10	18	40	32
4*	0.31	-0.22	7	60	22	8	3
5	0.10	0.09	7	47	27	15	5
6*	0.32	-0.21	5	77	12	3	3
7	0.16	0.02	3	55	32	5	5
8*	0.32	-0.25	0	33	32	15	20
9	0.43	-0.40	2	67	22	8	2
10*	0.62	-0.16	2	15	28	23	32
11	0.27	-0.04	5	18	38	25	13
12	0.07	0.12	2	7	30	23	38
13*	0.43	-0.21	2	72	13	8	5
14*	0.26	-0.16	2	65	23	7	3
15*	0.45	0.02	0	53	22	13	12
16	0.19	-0.17	2	20	20	32	27
17	0.20	-0.20	5	13	27	18	37
18	-0.07	0.01	5	15	40	13	27
19	0.17	0.05	2	80	5	5	8
20*	0.51	-0.13	0	13	32	30	25
21*	0.39	-0.29	0	8	20	28	43
22	0.23	0.01	0	22	15	25	37

TABLE I CONTINUED

23*	0.48	-0.03	2	65	27	3	3
24*	0.36	-0.09	2	72	13	10	3
25	0.16	0.04	2	12	18	27	42
26	0.25	-0.16	2	25	22	33	18
27*	0.36	-0.10	2	58	25	8	7
28	0.28	-0.10	5	12	22	30	32
29*	0.41	-0.22	4	75	15	3	3
30*	0.55	-0.29	0	53	37	7	3
31*	0.47	-0.16	0	82	12	3	3
32*	0.51	-0.20	0	67	23	7	3
33	0.29	-0.30	7	50	30	7	3
34	0.22	-0.26	3	82	7	5	3
35*	0.39	-0.12	2	80	12	3	3
36*	0.50	-0.27	0	66	23	8	3
37	0.25	-0.13	7	63	23	3	3
38	0.32	-0.31	0	8	18	32	42
39	0.26	-0.18	3	68	15	7	7
40	0.14	-0.17	2	22	40	20	17

* Items which met the empirical criteria

TABLE J

THE FIRST PRELIMINARY ITEM ANALYSIS FOR THE
SECOND TEST OF STATE ANXIETY (SA2)

Item	Item-remainder Correlation	Correlation with Criterion of Sex	Percent in Each Alternative			
			0	1	2	3 4
1	0.14	0.31	0	60	31	2
2	0.27	0.28	0	56	34	5
3*	0.32	-0.02	0	7	29	29
4	0.16	-0.20	1	34	25	27
5	0.28	0.34	0	54	29	4
6	0.20	0.18	5	40	35	1
7*	0.38	0.06	9	55	27	3
8	0.24	0.04	1	44	38	5
9*	0.31	0.07	0	21	35	15
10*	0.46	0.07	1	10	30	30
11*	0.38	0.01	7	70	13	5
12*	0.30	-0.11	1	41	30	6
13	-0.18	0.09	6	38	38	5
14*	0.36	-0.08	1	55	19	10
15	0.25	-0.11	4	49	24	13
16	0.14	-0.21	1	40	21	16
17*	0.41	0.17	1	59	17	6
18	-0.17	0.03	9	46	32	2
19*	0.50	0.06	4	50	31	4
20*	0.38	-0.07	0	54	29	3

TABLE J CONTINUED

21	0.28	0.08	0	70	20	5	5
22	0.07	0.07	2	20	26	26	25
23*	0.45	-0.20	1	9	26	27	36
24	0.22	-0.06	1	27	35	21	15
25	-0.12	-0.05	6	42	36	9	6
26	0.18	0.05	1	41	42	11	4
27*	0.37	-0.09	0	9	19	32	40
28	0.22	-0.01	4	49	36	6	5
29*	0.49	0.02	0	60	27	7	5
30*	0.45	0.02	0	49	30	11	10
31*	0.44	0.13	2	45	22	15	15
32*	0.45	0.09	1	61	22	13	3
33*	0.33	-0.04	0	9	15	30	46
34*	0.35	-0.20	1	34	24	15	26
35	0.25	-0.04	0	44	20	19	17
36	0.26	-0.13	2	45	27	7	17
37	0.14	-0.12	4	42	34	10	10

* Items which met the empirical criteria

TABLE K

THE FIRST PRELIMINARY ITEM ANALYSIS FOR THE
FIRST TEST OF TRAIT ANXIETY (TA1)

Item	Item-remainder Correlation	Correlation with Criterion of Sex	Percent in Each Alternative				
			0	1	2	3	4
1	0.17	-0.05	0	5	40	21	34
2	0.19	0.13	0	14	21	31	34
3	-0.01	-0.35	3	34	36	17	9
4*	0.31	-0.13	10	47	33	7	3
5	-0.16	-0.23	5	21	41	21	12
6*	0.61	0.02	0	66	19	9	7
7*	0.57	0.11	2	67	21	7	3
8	0.24	-0.02	3	45	26	16	10
9*	0.47	0.13	3	7	33	28	29
10	0.38	-0.30	0	24	31	22	22
11	0.14	-0.02	7	50	33	7	3
12	-0.02	0.34	7	21	33	28	12
13	0.28	0.12	0	2	14	55	29
14*	0.41	0.13	2	16	33	22	28
15	0.10	0.31	2	12	24	22	40
16	0.28	-0.24	2	72	17	7	2
17	0.26	0.13	5	16	22	28	29
18*	0.32	0.06	0	64	24	7	5
19*	0.44	0.00	2	59	19	14	7
20*	0.54	0.08	3	62	22	7	5

TABLE K CONTINUED

21	0.21	0.04	0	55	24	17	3
22*	0.57	0.00	0	57	31	9	3
23*	0.64	-0.04	0	72	14	10	3
24*	0.44	0.06	0	60	21	14	5
25*	0.63	-0.03	0	14	31	24	31
26*	0.49	0.09	0	9	31	24	36
27*	0.68	-0.08	0	14	24	29	33
28*	0.60	-0.12	0	74	14	9	3
29*	0.70	-0.14	0	52	29	7	12
30*	0.39	-0.27	2	75	10	10	3
31*	0.68	-0.08	0	64	19	12	5
32	0.21	0.19	5	22	26	19	28
33*	0.30	-0.14	7	40	33	16	5
34*	0.51	-0.07	2	81	9	3	5
35*	0.67	-0.04	0	67	19	9	5
36	0.13	0.11	3	17	22	21	36
37*	0.59	0.09	0	66	17	9	9
38*	0.39	-0.14	0	9	22	29	40
39*	0.31	0.02	2	10	38	16	34
40*	0.59	-0.17	0	67	19	7	7
41*	0.48	0.14	0	60	16	10	14
42	0.02	-0.18	3	24	29	16	28
43	0.28	-0.25	0	16	22	19	43

* Items which met the empirical criteria

TABLE L

THE FIRST PRELIMINARY ITEM ANALYSIS FOR THE
SECOND TEST OF TRAIT ANXIETY (TA2)

Item	Item-remainder Correlation	Correlation with Criterion of Sex	Percent in Each Alternative			
			0	1	2	3 4
1*	0.36	-0.03	2	32	28	24 13
2*	0.33	-0.07	1	15	43	29 12
3	0.29	-0.02	0	62	22	12 4
4*	0.52	0.03	0	68	24	4 4
5*	0.36	0.17	0	59	20	9 13
6	-0.02	0.10	2	35	38	13 11
7*	0.39	0.12	5	12	20	29 34
8*	0.37	-0.04	6	61	27	3 3
9	-0.01	-0.19	10	43	38	7 2
10	0.21	-0.24	2	29	29	18 21
11*	0.44	0.09	0	10	18	23 49
12	-0.17	0.03	12	46	24	10 7
13	0.27	-0.03	1	41	34	15 10
14*	0.40	-0.13	0	41	38	13 7
15	-0.09	-0.13	6	45	33	10 6
16*	0.31	-0.00	1	65	23	4 7
17*	0.37	-0.05	1	63	18	11 6
18	0.04	0.02	0	23	24	22 30
19*	0.40	0.10	0	63	22	7 7
20*	0.22	0.02	4	70	16	5 6

TABLE L CONTINUED

21*	0.43	-0.02	2	12	16	39	30
22*	0.51	-0.04	4	62	18	7	9
23	0.23	0.02	1	70	16	7	6
24	0.03	-0.18	0	23	34	20	23
25	0.09	0.06	2	51	34	9	4
26*	0.37	0.12	0	15	20	26	40
27	0.08	-0.29	0	56	30	9	5
28*	0.33	0.19	4	56	33	1	6
29*	0.40	-0.02	2	61	21	13	3
30*	0.38	0.09	1	66	17	11	5
31*	0.40	0.15	1	16	7	33	43
32*	0.36	-0.00	0	5	15	32	49
33	0.28	-0.00	0	50	32	11	7
34	0.39	-0.01	1	56	27	12	4
35*	0.30	0.07	0	57	23	6	13
36	-0.04	-0.01	5	45	20	12	18
37*	0.51	0.05	0	63	23	7	6
38	0.20	-0.10	2	39	20	18	21
39	0.12	-0.23	0	46	29	7	17
40	0.00	-0.15	0	50	28	12	10

* Items which met the empirical criteria

APPENDIX 8
THE TEST FOR STATE ANXIETY
FOR THE SECOND PRELIMINARY SAMPLE

Name: _____ Boy _____ Girl _____

DIRECTIONS

WHAT IDEAS DESCRIBE HOW YOU FEEL? Everyone has his or her own ideas. There are no right or wrong answers. This is not a test.

A number of ideas which boys and girls have used to describe themselves are given here. Read each sentence. Decide how much it describes how you feel right now, at this moment. Then put a check mark in the column which shows how much the idea describes you.

If you think that the idea describes your present feelings "not at all", then put a check mark in the first column to the right of the sentence. If you think that the idea describes you "very much", then put a check mark in the fourth column to the right of the sentence.

If you think that the idea describes your present feelings somewhere in between "not at all" and "very much", then put a check mark in column two called "a little bit" or in column three called "quite a bit".

Rate each idea. Do not spend too much time on any one sentence but give the answer which seems to describe your present feelings best.

	NOT AT ALL	A LITTLE BIT	QUITE A BIT	VERY MUCH
1. I feel anxious.....				
2. I am jittery.....				
3. I feel excited.....				
4. I am calm.....				
5. I feel afraid.....				
6. I am "worked-up".....				
7. I feel jumpy.....				
8. I feel steady.....				
9. I feel confused.....				
10. I am fearful.....				
11. I feel panicky.....				
12. I am frightened.....				
13. I am upset.....				
14. I am worried.....				
15. I feel confident.....				
16. I am broody.....				
17. I am easy-going.....				
18. I am whiny.....				
19. I am not sure.....				
20. I feel distracted.....				
21. I am not secure.....				
22. I feel trembly.....				
23. I feel uncertain.....				
24. I am moody.....				
25. I feel certain.....				
26. I feel satisfied.....				
27. I am withdrawn.....				

- | | | | | | |
|-----|--------------------------|-------|-------|-------|-------|
| 28. | I am doubtful..... | ..... | ..... | ..... | ..... |
| 29. | I am bothered..... | ..... | ..... | ..... | ..... |
| 30. | I feel uneasy..... | ..... | ..... | ..... | ..... |
| 31. | I am sure of myself..... | ..... | ..... | ..... | ..... |
| 32. | I am not distracted..... | ..... | ..... | ..... | ..... |
| 33. | I feel embarrassed..... | ..... | ..... | ..... | ..... |
| 34. | I am relaxed..... | ..... | ..... | ..... | ..... |
| 35. | I feel nervous..... | ..... | ..... | ..... | ..... |
| 36. | I feel shaky..... | ..... | ..... | ..... | ..... |

APPENDIX 9

THE TEST FOR TRAIT ANXIETY
FOR THE SECOND PRELIMINARY SAMPLE

Name: _____ Boy _____ Girl _____

DIRECTIONS

WHAT IDEAS DESCRIBE HOW YOU FEEL? Everyone has his or her own ideas. There are no right or wrong answers. This is not a test.

A number of ideas which boys and girls have used to describe themselves are given here. Read each sentence. Decide how much it describes how you generally feel. Then put a check mark in the column which shows how much the idea describes you.

If you think that the idea describes how you generally feel "not at all", then put a check mark in the first column to the right of the sentence. If you think that the idea describes you "very much", then put a check mark in the fourth column to the right of the sentence.

If you think that the idea describes how you generally feel somewhere in between "not at all" and "very much", then put a check mark in column two called "a little bit" or in column three called "quite a bit".

Rate each idea. Do not spend too much time on any one sentence but give the answer which seems to describe best how you generally feel.

	NOT AT ALL	A LITTLE BIT	QUITE A BIT	VERY MUCH
1. I am jittery.....				
2. I feel mixed-up.....				
3. I am blushed.....				
4. I am calm.....				
5. I feel jumpy.....				
6. I feel pressured.....				
7. I am at ease.....				
8. I feel trembly.....				
9. I feel confused.....				
10. I feel afraid.....				
11. I am relaxed.....				
12. I am fearful.....				
13. I feel rested.....				
14. I feel comfortable.....				
15. I am frightened.....				
16. I feel nervous.....				
17. I feel panicky.....				
18. I feel shaky.....				
19. I feel tense.....				
20. I am terrified.....				
21. I am upset.....				
22. I am worrying.....				
23. I am clear-thinking.....				
24. I feel confident.....				
25. I am uneasy.....				
26. I am worried.....				
27. I am determined.....				

- | | | | | | |
|-----|--------------------------|--|--|--|--|
| 28. | I am easy-going..... | | | | |
| 29. | I am troubled..... | | | | |
| 30. | I feel hurried..... | | | | |
| 31. | I feel calm..... | | | | |
| 32. | I am not sure..... | | | | |
| 33. | I feel frantic..... | | | | |
| 34. | I am not secure..... | | | | |
| 35. | I feel distracted..... | | | | |
| 36. | I feel certain..... | | | | |
| 37. | I feel uncertain..... | | | | |
| 38. | I feel in control..... | | | | |
| 39. | I feel stressed..... | | | | |
| 40. | I am withdrawn..... | | | | |
| 41. | I feel guilty..... | | | | |
| 42. | I feel satisfied..... | | | | |
| 43. | I am sure of myself..... | | | | |
| 44. | I am hesitating..... | | | | |
| 45. | I am bothered..... | | | | |
| 46. | I feel uneasy..... | | | | |
| 47. | I am prepared..... | | | | |
| 48. | I am moody..... | | | | |

APPENDIX 10
INSTRUCTIONS AND THE SOCIAL DESIRABILITY RATING FORM
GIVEN TO SUBJECTS

DIRECTIONS:

READ CAREFULLY PLEASE

On the paper, you will find ideas that may be used to describe how boys (girls) feel now, at this moment. Your task will be to rate how pleasing each idea would be to describe yourself. You are to rate how pleasing each idea would be as descriptive of yourself now, at this moment.

There are no right or wrong answers. Everyone has his (her) own answers. This is not a test.

In making your ratings, first decide how pleasing the idea is, then write down the number beside each idea that goes with how pleasing you think the idea is to describe how you feel now, at this moment.

Do it like this:

Not at all pleasing	=	1
A little bit pleasing	=	2
Quite a bit pleasing	=	3
Very much pleasing	=	4

For example, one boy (girl) described three ideas in this way:

1. I am happy	4
2. I am sad	<u>1</u>
3. I am worried	<u>2</u>

The boy (girl) who made these ratings decided that idea 1 would be a feeling very much pleasing in himself (herself) now, at this moment, so he (she) wrote the number 4 beside the idea. He (She) thought that idea 2 would be a feeling not at all pleasing in himself (herself) now, at this moment, and he (she) wrote the number 1 beside the idea. Next, he (she) thought that idea 3 would be a feeling a little bit pleasing in himself (herself) now, at this moment, and he (she) wrote a 2 beside the idea.

In the same way as shown above, show your ratings of how
pleasing each idea would be of yourself now, at this moment. Please
place the number which goes with how pleasing you think each idea is
to the right of the idea, on the line given.

Thank-you.

DIRECTIONS:

READ CAREFULLY PLEASE

On the paper, you will find ideas that may be used to describe how boys (girls) generally feel. Your task will be to rate how pleasing each idea would be to describe yourself. You are to rate how pleasing each idea would be as descriptive of yourself generally.

There are no right or wrong answers. Everyone has his (her) own answers. This is not a test.

In making your ratings, first decide how pleasing the idea is, then write down the number beside each idea that goes with how pleasing you think the idea is to describe how you generally feel. Do it like this:

Not at all pleasing	=	1
A little bit pleasing	=	2
Quite a bit pleasing	=	3
Very much pleasing	=	4

For example, one boy (girl) described three ideas in this way:

1. I am happy
2. I am sad
3. I am worried

4
1
2

The boy (girl) who made these ratings decided that idea 1 would be a feeling very much pleasing in himself (herself) generally, so he (she) wrote the number 4 beside the idea. He (She) thought that idea 2 would be a feeling not at all pleasing in himself (herself) generally, and he (she) wrote the number 1 beside the idea. Next, he (she) thought that idea 3 would be a feeling a little bit pleasing in himself (herself) generally, and he (she) wrote a 2 beside the idea.

In the same way as shown above, show your ratings of how pleasing each idea would be of yourself generally. Please place the

number which goes with how pleasing you think each idea is to the right of the idea on the line given.

Thank-you.

APPENDIX 11

THE RESULTS OF THE SECOND PRELIMINARY ITEM ANALYSIS

TABLE M
THE SECOND PRELIMINARY ITEM ANALYSIS FOR THE
TEST OF STATE ANXIETY

Item	Item-remainder Correlation	Correlation with Criterion of Sex	Correlation with Social Desirability Criterion Males	Correlation with Social Desirability Criterion Females	Percent in Each Alternative			
					0	1	2	3 4
1	-0.14	0.21	0.4446	0.2207	0	47	34	13 6
2	0.20	-0.19	0.0141	0.4819	3	69	28	0 0
3*	0.58	0.10	0.5559	0.2229	0	31	25	22 22
4*	0.44	0.09	0.5174	0.4288	3	34	28	19 16
5*	0.69	0.08	0.2376	0.1465	3	69	13	13 3
6	0.31	-0.04	0.6012	0.7355	0	47	34	9 9
7	0.21	0.18	0.2832	0.6333	0	66	28	6 0
8*	0.42	0.08	0.4526	0.5206	0	16	34	16 34
9*	0.34	0.04	0.0217	0.6730	3	66	9	9 13
10*	0.36	-0.18	0.8415	0.3193	3	78	6	13 3
11*	0.45	0.12	0.0430	0.0284	0	78	9	6 6
12*	0.45	-0.09	0.1572	0.2582	0	81	9	3 6
13*	0.51	0.02	0.4733	0.5485	0	66	19	6 9
14*	0.50	0.13	0.4590	0.3489	0	66	19	9 6
15	0.25	-0.04	0.5071	0.7241	3	22	25	31 19
16*	0.58	0.03	0.4253	0.4599	6	56	28	6 3
17	-0.09	0.22	0.5074	0.2652	0	3	44	31 22
18	0.56	-0.12	0.0306	0.8016	6	66	19	3 6
19*	0.45	0.08	0.3751	0.6719	0	38	31	16 16

TABLE M CONTINUED

20*	0.41	-0.42	0.1231	0.4677	6	50	25	6	13
21	0.17	-0.08	0.0921	0.3002	0	63	28	0	9
22*	0.37	-0.12	0.0843	0.0913	0	56	19	6	9
23	0.22	0.03	0.1122	0.6662	0	69	25	6	0
24	0.48	0.01	0.7124	0.8239	6	41	22	22	9
25	-0.06	-0.11	0.0407	0.5232	0	16	9	28	47
26	0.52	-0.13	0.8135	0.5411	0	28	19	25	28
27	0.22	-0.07	0.0218	0.7112	3	63	28	0	6
28*	0.35	-0.05	0.1451	0.4590	0	59	25	6	9
29	0.18	0.15	0.8747	0.0913	3	50	22	9	16
30*	0.60	-0.08	0.2279	0.7701	0	66	28	3	3
31	0.11	0.19	0.5946	0.1593	0	3	9	31	56
32	0.22	-0.15	0.1509	0.4810	0	31	28	16	25
33*	0.32	0.21	0.2259	0.4002	5	77	12	3	3
34*	0.39	0.29	0.4002	0.4590	0	8	20	28	43
35*	0.55	0.29	0.3751	0.2932	0	53	37	7	3
36*	0.51	0.20	0.4599	0.2677	0	67	23	7	3

* Items which best met the empirical criteria (without duplicating item content)

TABLE N
THE SECOND PRELIMINARY ITEM ANALYSIS FOR THE
TEST OF TRAIT ANXIETY

Item	Item-remainder Correlation	Correlation with Criterion of Sex	Correlation with Social Desirability Criterion		Percent in Each Alternative			
			Males	Females	0	1	2	3 4
1	0.08	-0.10	0.4824	0.1110	0	64	30	3 3
2	0.26	0.17	0.2624	0.0550	0	61	36	0 3
3*	0.37	0.20	0.5510	0.1114	0	67	18	12 3
4*	0.12	-0.22	0.1832	0.4735	3	21	18	33 24
5*	0.37	0.26	0.3455	0.2522	0	67	12	15 6
6*	0.44	0.05	0.2065	0.4303	3	48	33	3 12
7	0.05	-0.09	0.1171	0.6638	0	21	27	24 27
8	0.24	-0.18	0.0250	0.2556	3	58	24	6 9
9*	0.37	0.17	0.3863	0.2268	3	52	30	9 6
10*	0.53	0.08	0.5673	0.1806	0	79	18	3 0
11*	0.33	0.06	0.4250	0.3899	0	15	27	27 30
12*	0.45	0.08	0.5714	0.4066	6	42	30	12 9
13	0.14	0.03	0.1598	0.0758	0	21	21	30 27
14	0.10	0.25	0.2509	0.6845	0	12	30	24 33
15	0.58	0.23	0.4143	0.4404	0	67	24	6 3
16*	0.45	-0.01	0.4027	0.6334	0	48	39	3 9
17*	0.46	-0.05	0.0683	0.7466	0	76	18	6 0
18*	0.53	0.14	0.1087	0.2881	0	61	30	6 3
19	0.18	0.05	0.6330	0.8453	0	67	21	6 6
20*	0.40	0.21	0.2307	0.0400	0	79	18	0 3

TABLE N CONTINUED

21	0.48	0.02	0.1978	0.7040	0	55	36	9	0
22	0.60	-0.01	0.2381	0.7836	0	48	27	21	3
23	0.27	0.09	0.7621	0.4358	0	9	21	27	42
24	0.08	-0.00	0.3298	0.6999	0	42	12	21	24
25	0.29	0.17	0.3379	0.1222	0	61	27	9	3
26*	0.36	0.27	0.0110	0.2582	6	61	27	3	3
27	0.24	-0.01	0.6625	0.7002	3	48	21	12	15
28	-0.04	0.15	0.3924	0.5134	0	9	24	39	27
29	0.39	0.12	0.4284	0.7576	0	52	39	3	6
30*	0.71	0.13	0.2652	0.6438	0	42	42	9	6
31	0.55	0.28	0.1342	0.8660	0	30	15	12	42
32*	0.50	0.13	0.5454	0.1942	0	33	42	15	9
33*	0.34	-0.10	0.4017	0.5664	0	76	15	9	0
34	0.25	-0.02	0.5102	0.0000	0	67	21	6	6
35*	0.30	-0.20	0.1390	0.2259	3	52	21	9	15
36	0.36	0.23	0.7444	0.4441	3	9	30	21	36
37*	0.53	0.26	0.0429	0.2682	3	67	18	6	6
38	0.26	0.04	0.1370	0.6402	0	18	21	21	39
39*	0.34	-0.02	0.2920	0.1173	3	61	18	12	6
40	0.23	0.33	0.3693	0.6071	0	67	21	12	0
41	0.26	0.05	0.3111	0.4075	3	70	12	9	6
42	0.17	-0.04	0.4464	0.6636	0	24	21	12	42
43	0.14	0.33	0.0333	0.0000	6	3	24	15	52
44	0.49	0.06	0.0000	0.7180	3	64	18	0	15
45	0.53	0.24	0.3787	0.8643	3	48	24	12	12
46*	0.57	0.16	0.3177	0.0127	3	67	27	3	0
47	0.38	0.49	0.4999	0.9132	0	9	27	30	33
48	-0.00	-0.17	0.5831	0.5709	3	30	30	12	24

* Items which best met the empirical criteria (without duplicating item content)

APPENDIX 12
INSTRUCTIONS GIVEN TO SUBJECTS
OF THE RELIABILITY AND VALIDITY STUDIES

Good morning (good afternoon). I'm Mr. Price from the University of Windsor, and I am interested in the area of emotions of boys and girls. What I would like to do is to discuss with you the question: "What are the feelings of children?". Are there any of you who do not want to do this? Good. Thank-you for your help.

I have two papers that have some ideas about feelings written on them. Very shortly, I would like you to rate these ideas according to how much they describe you. But first, I shall explain, on the blackboard, the way in which to answer the ideas on the papers. (At this point, the experimenter wrote three sentences on the board, and to the right of these statements, he drew the columns of ratings. The sentences were: "I have red hair", "I am a man", and "I am tall".)

As you can see, we have three ideas on the left, and to the right, are four columns with words at the top of them. (The experimenter pointed to the appropriate areas on the blackboard.) Let us look at the first sentence, "I have red hair". Now, if I think that the idea "I have red hair" describes me "not at all", then I would put a check mark here, in the column called "not at all" and beside the idea, like this. Let us look at the second idea, "I am a man". If I think that the idea "I am a man" describes me "very much", which column would I use? (The experimenter asked one student.) Good. So, I would put a check mark here.

Now that you know where to show ideas that describe you "not at all" or "very much", let us look at an idea that may be somewhere in between. Many of the ideas about feelings may describe you neither "not at all" nor "very much" but somewhere in between. Let us look at the third idea, "I am tall". If I think that this idea describes me

"a little bit", where would I put my check mark? (The experimenter asked one student.) Good. So, I would put a check mark here. Are there any questions?

There are many ideas on the papers in the envelope that you will have. Make sure that you read each one and rate each one. Please do not open your envelope until I tell you to do so. (The experimenter distributed the papers in the envelopes.)

In your envelope, you will find two papers, one is marked with a "1" and the other is marked with a "2". Please take out the paper that is marked with a "1", and leave the other one inside the envelope until you have finished with the first paper. Place your name at the top lefthand corner of the paper. I am asking you to put your name on the paper because the next time that we meet here, I want to make certain that you get the two papers in the reversed order than the order of the papers today. Also, please put a check mark beside "boy" or "girl", whichever you are. I am asking you to do this because I want to see if boys and girls feel the same about the ideas. I am the only one who will see your answers. Are there any questions? Okay, read the directions on each paper carefully because each set of directions asks you to do something different. Remember, when you finish rating the ideas on paper "1", go on to paper "2". When you are finished both papers, please place both of them into the envelope. Please begin.

APPENDIX 13

SUBJECTS' SCORES ON THE STATE AND TRAIT ANXIETY MEASURES
ON THE TWO TESTING SESSIONS (TEST-RETEST RELIABILITY STUDY)

TABLE O
SUBJECTS' SCORES ON THE STATE AND TRAIT ANXIETY MEASURES
ON THE TWO TESTING SESSIONS

Ss	STATE MEASURE		TRAIT MEASURE	
	Session 1	Session 2	Session 1	Session 2
1	32	32	33	32
2	30	29	27	28
3	27	30	28	25
4	31	23	31	34
5	28	30	27	27
6	33	30	30	26
7	36	23	33	32
8	28	30	29	27
9	24	32	22	21
10	29	32	30	33
11	36	23	28	32
12	21	26	25	23
13	27	32	27	26
14	30	27	26	26
15	21	20	39	36
16	30	36	35	36
17	27	35	39	39
18	21	31	25	29
19	27	22	22	22
20	21	25	27	23
21	35	31	41	40
22	29	36	31	32
23	36	27	41	36
24	57	54	55	58
25	31	43	34	36
26	36	35	39	41
27	35	37	39	40
28	32	28	38	48
29	21	31	26	28
30	48	47	43	44
31	33	42	43	43
32	25	23	39	40
33	31	28	39	33
34	46	46	42	42
35	26	21	40	41
36	22	25	26	24
37	36	31	44	40
38	24	24	45	46

APPENDIX 14

SUBJECTS' SCORES ON THE STATE AND TRAIT ANXIETY MEASURES FOR
NON-EXAMINATION AND EXAMINATION DAYS (VALIDITY STUDY)

TABLE P
SUBJECTS' SCORES ON THE STATE AND TRAIT ANXIETY MEASURES FOR
THE NON-EXAMINATION AND EXAMINATION DAYS

<u>Ss</u>	<u>STATE ANXIETY MEASURE</u>		<u>TRAIT ANXIETY MEASURE</u>	
	No Exam Day	Exam Day	No Exam Day	Exam Day
1	30	33	31	31
2	29	30	28	26
3	26	39	31	29
4	49	57	48	50
5	41	49	40	38
6	36	35	32	34
7	38	53	48	49
8	31	33	28	30
9	32	43	31	23
10	20	23	31	27
11	24	31	23	26
12	21	25	21	22
13	37	30	25	34
14	22	34	34	31
15	31	33	28	28
16	20	24	33	34
17	22	27	21	21
18	26	43	42	23
19	38	48	29	38
20	24	26	22	25
21	27	34	32	31
22	23	29	33	33
23	20	29	26	23
24	29	30	31	26
25	25	28	26	24
26	28	47	29	30
27	24	34	32	27
28	32	37	34	35
29	44	45	50	54
30	23	22	24	23
31	31	36	38	30
32	22	31	29	26
33	33	33	24	26
34	22	26	26	29
35	36	36	44	44
36	29	30	36	35
37	24	33	27	25

TABLE P CONTINUED

38	33	34	35	36
39	28	38	25	23
40	21	24	27	26
41	25	31	27	35
42	20	22	21	19

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